



## Project Result 4

# The VET LOVES FOOD Replication Path

The VET LOVES FOOD Consortium  
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Rethink, Reduce, Reuse - VET LOVES FOOD (2021-1-ES01-KA220-VET-OOOO25377)

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## THE VET LOVES FOOD PROJECT

VET LOVES FOOD – Rethink Reduce Reuse is an Erasmus + KA 220-VET project based on the broader framework of the LIFE FOSTER project and aims at supporting awareness-raising about the fight against food waste in the catering sector and in VET centres. It is co-funded by the Erasmus+ program, specifically in the context of Key Action 2 – VET, regarding cooperation partnership in vocational education and training, and it involves VET centres from Spain, Italy, and Portugal.

Food systems today have a huge impact on the environment. Unsustainable food production and consumption practices are leading to environmental degradation and exacerbate climate change. That's why it's time to change the approach and to foster a sustainable and resilient food system that can be healthier for both people and the planet.

VET LOVES FOOD embraces the “Rethink, Reduce, Reuse” mentality, with the aim of developing green skills competencies regarding food waste, developing green sectorial skills strategies and methodologies, as well as future-oriented curricula able to meet labour and community needs.

Addressed to VET learners - chefs-to-be-, trainers, staff, and authorities, VET LOVES FOOD is focused on developing the following results:

1. A VET Curriculum in the agri-food sector for the development of green skills oriented to food waste prevention and sustainable food production.
2. A hands-on Manual for preventing food waste and valorizing traditional recipes and local products for professionals, trainers and private citizens.
3. A European HUB for food waste prevention and food waste management: it will be an online platform, serving as a repository of tools and resources such as an e-learning course, a community of trainers and students, and a digital learning environment.
4. VET LOVES FOOD Replication Path: final phase of research and adaptation of the VET LOVES FOOD training model to ensure its replicability and application in other European countries, with related guidelines for external stakeholders, VET centres and VET Authorities.

The broader objective of the Project is to engage local stakeholders and raise awareness in the challenge of reaching the Sustainable Development Goals. In this way, the project

will contribute to the improvement of the quality of VET offers in Europe and will generate a real impact on the community.

The project partnership is composed as follows:

**Coordinator:**

Confederación Española de Centros de Enseñanza Asociación C.E.C.E. (Spain) - <http://www.cece.es/>

**Partners:**

Mentortec Serviços de apoio a projetos tecnologico SA (Portugal) - <http://mentortec.eu/>

CEPROF – Centros Escolares de Ensino Profissional Lda (Portugal) - <http://www.espe.pt/>

Holding Hostelería SA (Spain) - <http://www.escuelahosteleria.com/>

Learningdigital SRL (Italy) - <http://www.learningdigital.eu/>

ENAIIP Veneto (Italy) - <http://www.enaip.veneto.it/>

EVTA – European Vocational Training Association (Belgium) - <https://www.evta.eu/>

## **THE VET LOVES FOOD REPLICATION PATH**

The VET LOVES FOOD Replication Path is the final Result of the VET LOVES FOOD Project. This result intends to gather together the information of all the previous results developed within the frame of the Project in order to provide a comprehensive set of recommendations for the adaptability of the results provided by the VET LOVES FOOD Project in each of the European Union's members local contexts.

This document has been produced in the format of a policy paper, establishing national recommendations for the country members of the European Union on the topics of greening VET education systems and preventing food waste within the HORECA sector.

The core objective of the VET LOVES FOOD Replication Path is to present a replicable framework that will end up with a set of recommendations, addressed to all the practitioners outside the partnership that can be suitable for tailoring the project model to their local context, with relevant explanations of the reasons that supports the further implementation of a specific component rather than another one. Therefore, this document is aimed at offering general recommendations to explore what are the synergies

and gaps between the EU education systems and the VET LOVES FOOD model. Hence, the partnership shall investigate the possibility of replicating the VET LOVES FOOD model in each country specific context and, if needed, how to adapt it to the country specific context.

In order to achieve the specific objectives of the present result, the current status of the sustainable and food waste prevention approaches in the education systems of 23 out of 27 EU member states.

## METHODOLOGY

The present document has been produced based on a desk research, which has followed a qualitative methods' approach. The investigation process has been developed through a thorough literature review based upon national and European reports on the countries subject of the present study. The indicators used for producing the recommendations are qualitative, based on the development of the Educational Sustainable Development of the countries, both in general aspects of education and in VET, and the implication of the national governments in providing food waste prevention strategies and tools in the education contexts.

The present methodology implies:

- a) A compilation of already existing green-driven sustainable and food prevention practices in the education systems of the EU Member States aligned with the characteristics of the VET LOVES FOOD model.
- b) The mapping of the social, economic, and cultural context of the 23 EU Member States related to green-driven sustainable practices and food waste prevention in order to measure the potential applicability of the VET LOVES FOOD model in the country's context, and the adaptability of the VET LOVES FOOD model to the country's particularities.

The scope of the present research involved the current status of the sustainable and food waste prevention approaches in the education systems of 23 out of 27 EU member states (those not already analysed in the P.R 1, namely Spain, Italy, Belgium and Portugal), being those: Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland Romania, Slovakia, Slovenia and Sweden.

As aforementioned, the following countries: Spain, Italy, Belgium and Portugal have not been reflected in the present document, since, as they are part of the Project, these countries have already implemented the VET LOVES FOOD model.

## ANALYSIS

This section of the document is dedicated to the analysis of the each afore-mentioned case of study, based on the relevance and adaptation degree of each result to the country context, including explanatory insights on the reasons why the relevance or the adaptation of the result to the country are high or low.

The present section has been structured in a way in which it provides a comprehensive analysis of the possibility of replication of each result in each of the analysed countries. First, a brief description of each of the results and its main characteristics can be observed. Then, the countries-analysis will follow.

### RESULT 1 – THE VET LOVES FOOD GREEN CURRICULUM

The VET LOVES FOOD Green Curriculum is a VET Curriculum in the agri-food sector for the development of green skills oriented to food waste prevention and sustainable food production, which core objective is the identification of Green Skills Curriculum required by the market applicable to agro-food curricula in VET.

The Curriculum can be featured as a) an educational resource that addresses the challenges of the green transition, especially those aimed at food waste prevention in the following areas: energy consumption, waste disposal, food culture and ethics, how to manage a restaurant from a more sustainable approach, and sustainable diets; b) an educational resource that develops green-driven sustainable approaches for training chefs-to-be on the afore-mentioned topics; c) a mean to promote a change of mindset about sustainability amongst learners; d) a tool that innovates in VET training offers by providing VET curricula with a direct focus on developing green skills that prevents food waste; e) an instrument that enhances dialogue between VET providers and socio-economic actors to shape sustainable training proposals.

According to the previous description, the following countries have been analysed:

#### Austria

##### Relevance (4/5)



In the dynamic landscape of the HORECA sector in Austria, environmentally oriented sustainable practices are seamlessly integrated into VET programs. They are explained in detail as follows:

- **Curricula Integration:** Vocational Education and Training (VET) programs integrate sustainability into the HORECA sector, covering topics like sustainable sourcing and waste reduction. This ensures graduates are well-versed in the principles of sustainable hospitality.
- **Certifications and Standards:** Training programs introduce students to relevant certifications and standards, empowering them to implement environmentally conscious practices aligned with industry benchmarks.
- **Industry Collaboration:** collaboration with industry partners, environmental organisations, and sustainability experts provides practical insights and real-world examples, bridging the gap between theory and application.
- **Hands-On Training:** integrated hands-on training in sustainable kitchens allows students to gain practical skills in eco-friendly practices, preparing them for future careers.
- **Case Studies and Best Practices:** including case studies inspires students to implement sustainable practices in their professional endeavours.
- **Waste Management Training:** specific training on waste management empowers individuals to minimise their environmental footprint by addressing both kitchen-generated and customer-generated waste.
- **Menu Planning for Sustainability:** training programs teach students to plan menus that are sustainable and appealing to customers, incorporating locally sourced ingredients, and minimising waste (Australian Hotelier Association, 2023).

The best example/instrument that enhances dialogue between VET providers and socio-economic actors to shape sustainable training proposals based on the mentioned areas is Austrian Hoteliers Association (ÖHV): **Sustainability as a matter of expertise: the Climate-friendly hotel cuisine initiative.**

The project was born from the implementation of sustainability as a matter of competence of the Association and the Campus. In this regard, the Climate-friendly hotel cuisine initiative was launched.

The ÖHV has launched this new initiative together with the Austrian Ministry of Climate Protection. They want to contribute to a more climate-friendly food and beverage offering

in the hotel industry and provide many suggestions and useful tips for practice based on facts, background reports and best practices.

The initiative, in addition to integrating the curricula of the campus training courses, also targets all HORECA businesses (AMS AUSBILDUNGSKOMPASS, 2023).

#### **Adaptation (4/5)**

A scrutiny of the Austrian training courses listed in the AMS TRAINING COMPASS database was conducted, encompassing all vocational education and training (VET) offers from schools and institutes nationwide.

VET programs wield significant influence in moulding the upcoming cohorts of HORECA professionals, but a lack of concrete instances of sustainable practices and food waste prevention within these programs has been noted. It is imperative to bridge this gap, ensuring that sustainability not only remains ingrained in business practices but also becomes a cornerstone in the education and training of future HORECA professionals.

Addressing this disparity is crucial, and a potential avenue involves revisiting and enhancing VET programs to incorporate modules specifically dedicated to sustainable practices and the responsible management of food resources.

In conclusion, Austria stands as an opportune ground to implement green-driven food waste prevention models within VET centres, following the template provided by VET LOVES FOOD PROJECT, which proposed a specific curricula in the agro – food sector, aiming to develop practical and professional competences in the topic of Food waste management and sustainability.

Applying a similar course to VET HORECA centres in Austria is the best possible recommendation as it would integrate the already existing modules with such areas as: energy consumption, waste disposal, food culture and ethics, how to manage a restaurant from a more sustainable approach, and sustainable diets. As explained previously, the research has highlighted a great green culture in the HORECA sector in Austria therefore making this recommendation possible could be very easy and attractive for a country already predisposed to food sustainability.

### **Bulgaria**

#### **Relevance (3/5)**



From a general approach, Bulgaria includes “green content” in all the national education pathways, in the frame of the Ordinance No 13/2016 (CEDEFOP, 2023). However, this content is broad, general, and not specified. Besides, there is no specific legislation concerning skills for the green transition through VET and apprenticeships. Nevertheless, Bulgaria, as a member of the European Union, is working towards an effective implementation of the Greencomp Framework. Therefore, it can be inferred that to have specific content on green transition and sustainability in this country is a matter of time (Eurydice, 2024).

Focusing in the Hospitality sector, in Bulgarian educational curricula, the green skills are integrated as part of a set of soft skills to be considered, but they are not developed and specified, clustered in two great topics: “social responsibility” and “environmental consciousness”. One of the main problems to be highlighted in the Bulgarian context, is not only that there are no specific guidelines on green, sustainable approaches in VET curriculum, especially in the HORECA sector (Kiryakova -Dineva et al., 2019). The major problem is that there is a clear lack of social consciousness on the problems of unsustainable food system and food waste, as it is reflected in a study where a sample of students of the hospitality sector in tourism considered that, among the set of soft skills taught within the hospitality course, “social responsibility” and “environmental consciousness” were just of moderated importance, being the skills with a lower punctuation of the list of soft skills (United Nations Environmental Program - UNEP. 2016).

### **Adaptation (1/5)**

From a pure academic approach, the VET LOVES FOOD Curriculum could be a good asset for the green skills’ integration in the Bulgarian VET Curricula of the Hostelry training offers, since there are not specific resources.

However, the problem for a proper integration of the VET LOVES FOOD Curriculum in the Bulgarian system is social and cultural. Since the target groups, VET staff and learners of the HORECA sector, do not give the necessary relevance to the topics of sustainability and food waste prevention and management, it is very complicated either engaging future chefs and professionals of the HORECA sector or upskilling professionals currently working in the HORECA sector.

It seems that Bulgaria is going towards greening their education offer, sometimes pushed by the European Union's programmes and regulations, such as the [Greencomp](#) and the [European Green Deal](#). However, apparently, the Bulgarian labour market for the HORECA sector is currently prioritising other needs more focused on functional skills, such as “professional behaviour” or “ability for digital interaction”. Therefore, probably Bulgaria will be socially and culturally ready to implement green/sustainable-oriented tools in its education curricula in the next few years, but in the present, probably the tool would be unappreciated.

According to the information previously gathered, the adaptation of the VET LOVES FOOD Green Curriculum would be certainly inefficient in a country with such characteristics. However, on the other hand, since there is no reference framework on green skills in the VET pathways of the Bulgarian HORECA sector, in order to provide an efficient usage of the result, the VET LOVES FOOD Green Curriculum should be readapted in Bulgaria purely as document of interest for VET centres, where the modules should act just as key areas of reference. Waste management should be the most relevant topic to be addressed, since there is a concerning lack of knowledge on the matter.

## Croatia

### Relevance (5/5)

In line with the national food waste prevention plan, the curricula for pre-school, primary and secondary education include topics such as sustainable development, civic education and health, which cover food waste aspects. A teacher education module on the theme of sustainable development, including food waste prevention, has been created.

In addition, the Agency for Vocational Education and Training has also developed teacher training on food waste as part of the module Socially Useful Learning. In 2020, school projects were related to the topic ‘prevention and reduction of food waste (regional aspect)’, in accordance with the food waste prevention and reduction plan, the action plan for education for sustainable development and UN Agenda 2030.

Since 2013, Croatia has been implementing the school scheme for primary and secondary school students to promote healthy eating habits and to increase the share of fruits and vegetables, milk and dairy products in pupils' daily diet. Food waste prevention is one of the topics included as part of additional educational measures in the context of the scheme.

The University of Zagreb Faculty of Agriculture offers a course in Waste management in agriculture. The course provides a comprehensive overview of waste management, focusing on its relevance in agriculture and its implications for natural resources, animals, and humans. It examines types of agricultural waste, their quantity, and volume, with particular attention to those associated with animals, such as manure, bedding, wasted feed, and wastewater from buildings. The course explores the impact of nitrates, often linked to fertilisers and agricultural waste runoff, on groundwater, while delving into the legislations of the European Union and the Republic of Croatia regarding waste management in agriculture (University of Zagreb, 2023).

Additionally, it delves into the concept of the "three Rs" - Reduce, Reuse, and Recycle - as effective alternative measures to landfill disposal. Best Management Practices (BMPs) like rotational grazing and pasture renovation are presented. The course covers the description of modern landfills, incineration, mechanical-biological treatment of agricultural waste, and composting.

These topics also include the handling of manure, food-processing waste, sewage sludge, and wastewater disposal through irrigation. It addresses hazardous waste in agriculture, such as pesticides, herbicides, and various agrochemicals, and examines packaging waste and its management. The environmental impact of traditional agriculture on water, soil, and air is explored, with a reflection on the concept of sustainable development in agriculture.

### **Adaptation (3/5)**

The Croatian educational context, starting from the early years of compulsory schooling, places great emphasis on the need to train future citizens also on sensitivity to sustainable development and the implementation of environmentally friendly and zero-waste actions.

The attention placed on the subject by university courses is also considerable, and denotes a desire to develop this sector, with a view to the creation of new professionals dedicated to the sustainable management of many economic sectors, including, first and foremost, the HORECA sector.

In this context, the possibility of adopting, even at the vocational training level, an educational pathway specifically dedicated to the reuse and reduction of food waste, both

in the use of raw materials and in the management of reception facilities, can certainly generate a positive impact.

Furthermore, the VET LOVES FOOD course contents could serve as a stimulus to integrate or expand the already existing educational offerings at different levels of education (elementary or higher), thus laying the foundations for the development of an integrated pathway of environmental sustainability and food waste from compulsory school to the university.

## Cyprus

### Relevance (4/5)

The vocational education and training (VET) system of Cyprus is constantly being developed to respond better to the needs of the labour market.

The Ministry of Education, Culture, Sport and Youth has overall responsibility for developing and implementing education policy. The Ministry of Labour, Welfare and Social Insurance has overall responsibility for labour and social policy and the Human Resource Development Authority of Cyprus (HRDA) plays an important role in vocational training (CEDEFOP, 2021).

VET is also available through the apprenticeship system, which addresses young people between the ages of 14 and 18. 'Preparatory apprenticeship' (EQF 2) can last up to 2 school years, depending on the level and age of the apprentice. Young people aged between 14 and 16, who have not completed lower secondary programmes, may participate. After completing 'preparatory apprenticeship', graduates can either continue to 'core apprenticeship' or upper secondary programmes, provided they pass entrance examinations.

VET is mainly public. Secondary VET – including evening technical schools and the apprenticeship system – and public higher (tertiary/non-university) VET are free of charge, while various adult vocational programmes are offered for a limited fee.

Vocational training for adults is extensively available in Cyprus for the employed, the unemployed, vulnerable groups and adults in general, through a mixture of public and private provision: colleges, training institutions, consultancy firms and enterprises. The employed usually participate in training programmes for job-specific skills to meet company needs.

The economic sectors more strongly linked with the VET in Cyprus are the HORECA sector and constructions (The European Network for the Promotion of Culinary and Proximity Tourism in Rural Areas, 2023).

The education and training system in Cyprus, foresees also the development of specific courses for professionals and workers, like the ones implemented by the Higher Hotel Institute of Cyprus (HHIC) offers upgrading courses to employees in the hotel and restaurant sector.

Apart from the national training system, there are also a wide variety of initiatives related to the HORECA sector, which offer courses or training tools.

The European network for the promotion of gastronomic and proximity tourism in rural areas, which includes various waste management courses;

The Sustainability in Schools course aims to provide educators with the knowledge, skills and practical strategies to integrate sustainability principles into their teaching practices, promoting environmentally aware and socially responsible attitudes among students.

Through European consortia, Rivensco Consulting provides courses aimed at sustainability. In particular, the two examples that follow are suitable examples of HORECA courses aimed at integrating the curriculum of pre-existing courses and courses aimed at promoting sustainable gastronomic tourism in rural areas. The latter has a website that includes various courses including those on food waste management.

1 - The European network for the promotion of gastronomic and local tourism in rural areas.

The project includes a catalogue of 61 courses aimed at the green management of tourism, including the green management of culinary businesses, among which there are food waste management courses (Rivensco Consulting Ltd, 2023).

The main target groups of our project are HoReCa SMEs and professionals in rural areas, VET centres and trainers. The proposed courses are in different language: some of them are specific though for the target of Greek entrepreneurs and are provided in Greek only

## 2 - Sustainable Education: Integrating Sustainability in Schools

The Sustainability in Schools course aims to empower educators with the knowledge, skills, and practical strategies to integrate sustainability principles into their teaching

practices, fostering environmentally conscious and socially responsible attitudes among students.

An example of a private culinary professional diploma, is the Columbia Hotel Academy's VET by EHL, which is a pioneering champion of excellence in hospitality education. École hôtelière de Lausanne (EHL) is the most prestigious hospitality education institution in the world. Columbia Hotel Academy is open to anyone over 16 who wants to develop industry know-how, creativity, emotional intelligence, critical thinking and entrepreneurial spirit.

The VET by EHL programme (Vocational Education and Training) is the most suitable course for becoming a great chef, a smiling front-desk officer, a skilled restaurant manager, or an outstanding professional in hotel administration.

Whichever career path students choose, they will garner the experience of international standard luxury services and become top specialists in the hospitality industry. They will leave the Columbia Hotel Academy, with a guaranteed workplace within the industry, matching their acquired qualification (Columbia Hotel Academy, 2023).

#### **Adaptation (4/5)**

The characteristics and the technical features of the VLF agrofood curricula, could be integrated with positive efforts in the Cyprus VET organisation.

Being Cyprus a country with a strong orientation towards the third economic sector linked to tourism and personal services, there could be a growing need in the labour market for professional profiles with specific competences on food waste management in the restaurant, but also in catering and more in general, in the HORECA sector.

The topics and competences developed in the VLF training curricula, (Energy saving, Waste Management, Food Culture and ethics, Management of sustainable restaurants, Sustainable diets) could integrate both the public VET courses, but also could inspire a redefinition of other yet running private training courses.

#### **Czech Republic**

##### **Relevance (3/5)**

Projects such as "Zachraň jídlo" (Save the Food), "Vaříme zdravě" (We cook healthy), and initiatives in Sustainable agriculture in vocational education (as "Ekologické



zemědělství") offer educational resources aimed at addressing challenges in the green transition, particularly focusing on food waste prevention and sustainable food production. These resources cover topics like menu planning, portion control, food storage, and creative reuse of leftovers (Ministertvo Životního Prostředí, 2023).

Programs like Projekt "Ovoce do škol" (Fruit for schools) foster positive attitudes towards food and reduce waste by promoting local food consumption, healthy eating habits, and responsible use. Enviroportal offers interactive tools and case studies related to food waste prevention, enabling VET teachers to develop innovative curricula and engage students in exploring solutions directly addressing green skills and sustainable food practices. These curricula play a crucial role in preparing individuals for careers in the agro-food sector while instilling principles of sustainability and waste reduction (VUPP, 2023).

Initiatives like "Vaříme zdravě" (Cooking Healthy) indirectly impact future chefs by equipping them with food waste reduction skills. Similarly, the "Střední průmyslová škola potravinářství a služeb" (Secondary School of Food Industry and Services) at Pardubice serves as a model for sustainable practices in training chefs, implementing food waste reduction in its canteen and teaching students essential skills like food preservation. Also, The "Národní rada poradenství a vzdělávání pro zemědělství a rozvoj venkova" (National Advisory and Training Council for Agriculture and Rural Development) facilitates knowledge sharing and collaboration between VET providers, businesses, and farmers. This collaboration helps shape sustainable training proposals and addresses challenges specific to the Czech context. (Agricultural Association of the Czech Republic, 2023).

#### **Adaptation (4/5)**

Regarding the presence of VET Curricula in the agro-food sector for the development of green skills oriented towards food waste prevention and sustainable food production, initiatives like "Zachraň jídlo" (Save the Food), "Vaříme zdravě" (We cook healthy), and the "Střední průmyslová škola potravinářství a služeb" (Secondary School of Food Industry and Services) directly incorporate these aspects into their programs, providing targeted training in areas such as composting, food preservation techniques, and responsible consumption habits.

#### **Denmark**

#### **Relevance (5/5)**



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As in general, Denmark has been actively incorporating green skills into its Vocational Education and Training (VET) curricula to address the growing demand for environmentally sustainable practices. The inclusion of green skills aims to prepare students for careers in fields such as renewable energy, sustainable construction, and environmental management. These changes in the VET curricula involve integrating courses and practical training that focus on energy efficiency, waste management, and eco-friendly technologies. Furthermore, Denmark's emphasis on sustainability and environmental consciousness aligns with its national commitment to achieving carbon neutrality and promoting a green economy (CEDEFOP, 2022).

According to data provided by the European Commission, Denmark is far ahead in greening VET education. Denmark already mapped the future competence needs in relation to the green transition by zooming in on the largest VET programmes for meeting climate goals.

One of the most relevant examples on the implication of Denmark with the implementation of Green Skills in VET education is the [Green Academy Denmark](#), a VET institution focusing on providing education and training in agriculture and horticulture. In addition to its educational programmes, the Green Academy Denmark also conducts research in the field of landscaping. The institution's research focuses on the development of sustainable and environmentally friendly practices and technologies for agriculture and horticulture, with a particular emphasis on organic farming and the use of renewable energy. Overall, the Green Academy Denmark is an important educational institution in terms of providing knowledge and skills in landscaping within the Danish VET system. Through its educational programmes, research, and partnerships with enterprises and organisations, the Green Academy Denmark contributes to the sustainable development of the Danish horticultural and agricultural sector (European Training Foundation, 2023).

According to the data collected, seemingly, the priorities on green transition of the Green Academy Denmark correspond with a need of upskilling the VET curricula in the agro-food sector according to the new climate features of the country and demands of the sector.

Another example of Denmark's commitment with greening VET education is a [national funding pool with an entrepreneur green focus](#), supporting local projects that provide

young people with a broad insight into the experience of green entrepreneurship. Moreover, the Danish central government provides a subsidy for nine ‘Knowledge centres’ to prepare and test new teaching materials tasks related to the green transition. Besides, in Denmark, a special subsidy for providers of vocational training is used to develop local activities to support the green transition such as teachers’ professional development, working with companies, preparing teaching materials and investing in equipment to lower carbon dioxide emissions (European Commission, 2023).

To conclude, from the information exposed, it is clear that Denmark is leading the path towards greening VET education. The education system of the country not only counts with the resources, but also with the support of the Danish government and stakeholders in the sector. This means that society is also demanding a change towards greening education in the country. Therefore, one can assert that, in terms of resources to help greening the VET education, Denmark has plenty of them. The country seems to be on an unstoppable path towards sustainability, adapting the tools at its hand to its needs.

### **Adaptation (5/5)**

According to the information previously gathered, the VET LOVES FOOD Green Curriculum could be a great resource to be implemented in Denmark. The country has shown a clear focus on greening its education system, especially VET education, through mapping existing needs on green skills within the sector. Therefore, in this specific aspect, the Green Curriculum can be a great asset for the country to contrast and establish cross-cutting cleavages between their mapping of needed green skills and those addressed at an European level in the VET LOVES FOOD Green Curriculum.

In addition, as afore-mentioned, seemingly, the focus of Denmark’s efforts in greening VET are widely oriented towards the agro-food sector, putting an extra effort in agriculture and horticulture, which, although is quite related to the HORECA sector, it does not address what sustainable measures have to be taking in a post-harvesting phase. In this regard, the VET LOVES FOOD Green Curriculum can be of a great help as a continuation of the mapping of green skills needed in Denmark already gathered by the country.

In general, the VET LOVES FOOD Green Curriculum can serve as a great tool for Denmark’s VET education, since it can not only orient the needs on green skills and competences at an European level, but also it can help filling the gaps in the mapping on

green skills needs already made by the country's government. Besides, it is important to remark that the VET LOVES FOOD Green Curriculum's focus is on the HORECA sector, which, according to the data previously provided, makes it a great tool to align student's competences in the sector and labour market needs. Is that to say, since Denmark's VET system is based in Work Based Learning (WBL), the integration of the competences of the Project's Green CV could, effectively, lead towards a smoother transition of the students from the theoretical to the practical approach of their learning experiences.

## Estonia

### Relevance (5/5)

According to a preliminary research, since the year 2002, in which the Resolution 57/254 of the General Assembly of United Nations was release, on the declaration of the Decade of Education for Sustainable Development (2005-2014), Estonia started moving forward to contribute as much as possible to the commitments of the afore-mentioned declaration. In this regard, sustainable development has been recognized at all school levels as a cross-curricular objective since 2002. Since then, the Estonian Ministry of Education and Research have been in charge of funding learning and teaching materials for Education for Sustainable Development. In the frame of the action of this Ministry, several actions have been taken by the Estonian government, like the [Agenda 21 for Education in the Baltic Sea Region](#). Another example of the commitment of the Estonian government with integrating the concept of sustainable development in education is that, in the year 2010, the Estonian Ministry of Environment adopted the [Environmental Education Development Program](#). In this regard, Environmental Education has been, as well, a matter of highly importance in relation with teachers' education. For the purposes of upskilling and reskilling educators of all areas and fields of the Estonian educational sector, Estonia has focused on providing the education context with a holistic perspective on how to integrate sustainable development. For example, in the year 2023, the Estonian Education Ministry, launched a special in-service training curriculum for formal education teachers and non-formal education professionals which objective was to equip non-formal environmental education specialists, educators and teachers with the competences to implement active learning methods and integrate the cross-curricula environment and sustainable development topic in their everyday teaching. Besides, in terms of infrastructure, Estonia, during the last years, has built five modern buildings for

environmental education and 18 of the already existing ones were renovated. As examples, a new building was built for the [Environmental Education Centre of Pärnu County](#), and a new building was opened for the [Tartu Environmental Education Centre](#) (Henno, 2015).

In regard with VET education specifically, Estonia has made some more steps towards greening its education system. The expert group for VET (VET team), The Estonian Association for Advancement of VET, and the Estonian Erasmus+ Agency have taken the lead in supporting the green transition of VET. The meetings have so far focused on the circular economy, responsible business in the hospitality sector, and the ‘Rohetiiger’ (Green Tiger) initiative. The Green Tiger is an inter-sectoral cooperation platform that was launched in 2020, which seeks a green development leap in Estonian society through cooperation between four groups – entrepreneurs, the public sector, NGOs and individuals (CEDEFOP, 2022).

In November 2022, the Association and the Erasmus+ Agency organised an event called ‘Green awakening – Environmentally conscious VET’. Representatives of VET schools, school managers, local governments, and other stakeholders can visit sustainable companies promoting green ideas and engaging in the circular economy, whose experience, success stories, or activities could inspire VET.

The Estonian National VET team is doing many efforts to meet the requirements of a green education system in the country. For example, the team has recently developed policy recommendations to promote and support a sustainable approach to VET, including creating a sustainable vision and framework, enhancing communication and recognition of sustainable practices, coordinating sustainable initiatives at various education levels, and fostering cross-sector collaboration. This includes mapping, developing, and integrating green competences and sustainability principles into vocational curricula and enhancing the green competences of VET teachers, school leaders and school teams (CEDEFOP, 2024).

In conclusion, it is highly important to remark that greening education has been a priority for the Estonian government during the last 20 years. It is one of the European countries, which have extremely contributed to giving education a 360-degree experience on green competences through theory, practice, and various tools and instruments to promote it. Among the instruments the country can strive for is a green curriculum, which, as afore-

mentioned, have been thoroughly drafted to educate all ranges of education professionals on green competences. However, the curriculum mentioned before seems only to offer a wide education on transversal green skills in the education sector.

### **Adaptation (4/5)**

According to the information gathered, the adaptation of the VET LOVES FOOD Green Curriculum is not only very easy, but also needed. The awareness of the country, and more specifically, the governmental sector, on the need of green education have already set a pathway of action through which the curriculum developed by VET LOVES FOOD can be easily implemented in VET education. It is also remarkable that the country has already developed infrastructure, means and tools to implement a wide range of green skills education sector related.

In this regard, the VET LOVES FOOD Green Curriculum is needed. As afore-mentioned, Estonia has already developed a Green Curriculum of transversal green-related competences within the education sector. This curriculum is cross-sectional and teacher-oriented. Therefore, the curriculum developed by the VET LOVES FOOD consortium, due to its unique characteristics, being oriented towards VET students and trainers, is the perfect match to fill the gaps of the Estonian curriculum, by providing cross-sectorial but also specific competences for VET education in the HORECA sector.

## **Finland**

### **Relevance (4/5)**

The data analysed presents several educational resources and VET curricula in Finland focusing on green skills development for food waste prevention and sustainable food production in the agro-food sector. These initiatives are strategically designed to address the challenges of the green transition, including energy consumption, waste disposal, food culture and ethics, sustainable restaurant management, and promoting sustainable diets. The projects highlighted demonstrate a comprehensive approach to integrating sustainability principles into VET training, catering to the needs of future chefs and professionals in the food industry.

One notable educational resource is the "Gastronomy & Climate Change" course offered by HAMK University of Applied Sciences, which equips students with skills to minimise environmental impacts in food production and consumption. This course likely covers



topics such as energy-efficient cooking methods, waste reduction strategies, and the promotion of sustainable diets. Additionally, the "Circular Economy in Restaurants" training program by Sitra provides chefs with practical knowledge on implementing circular economy principles, thus reducing waste and resource consumption in restaurant operations.

#### **Adaptation (4/5)**

These initiatives offer practical models for replication in other European contexts. For instance, other countries can develop similar courses in culinary schools focusing on sustainability and climate change, tailored to their regional food culture and industry needs. The concept of circular economy principles in restaurant management, as demonstrated by Sitra's training program, can be adapted to various hospitality sectors across Europe, fostering a more sustainable approach to food service operations. Additionally, collaborations between VET providers and socio-economic actors, similar to those established in Finland through sustainable food system networks, can be replicated in other countries to shape sustainable training proposals and foster dialogue between education and industry stakeholders.

### **France**

#### **Relevance (3/5)**

In France, stakeholders and evaluation reports indicate that the incorporation of new green skill requirements into training is effectively achieved through diverse mechanisms of identification, adaptation, and consultation.

The Ministry of Education has taken significant steps to promote awareness of environmental issues. Since 2009, every lower secondary vocational diploma includes a module specifically designed to raise awareness, known as 'environment and health prevention' (PES) [Prévention santé environnement].

Curriculum adjustments are particularly tailored to sectors undergoing changes in job responsibilities associated with the green transition, such as renewable energies, construction, and agriculture.

The French Ministry of Agriculture has initiated a revamp of its qualifications to incorporate environmentally conscious aspects, with a specific focus on organic farming and plant protection (phyto-protection). Numerous agricultural training programs have

undergone significant revisions, a process facilitated by the efforts of the CPC 'Occupations in Agriculture, Transformation, Services, and Land Use Management.' This committee has played a key role in integrating sustainable development considerations into relevant qualifications.

The Ministry's adoption of the 'Agriculture biologique, horizon 2012' Plan in 2007 further underscored its commitment to a comprehensive strategy for advancing organic farming. This strategy emphasised research, development, training, territorial considerations, and collective catering. Within the framework of this plan and the conclusions drawn from the Grenelle environmental roundtable, the directives for the 2009-10 academic year reflected a notable shift. Specifically, there was a deliberate effort to infuse organic farming modules throughout all levels of agricultural education.

Simultaneously, recognizing the need for a broader modernization initiative, the Ministry of Agriculture launched a substantial program in 2007 targeting the enhancement of its 17 Vocational Baccalaureates. This transformation extended the duration of the programs from two to three years.

Furthermore, the regional vocational training program in the field of the environment for the year 2010 was developed to respond to the identified needs at the grassroots level. The novel training initiatives presented by the region in 2010 concentrate on three key domains:

- (a) Sustainable land use and agriculture,
- (b) Prevention and reduction of pollution and nuisances, waste management, adherence to standards, and corporate responsibility in social and environmental aspects,
- (c) energy efficiency and renewable energy development and management.

The integration of training related to the green transition is, however, less intensive in committees overseeing food and tourism. However, notable progress has been made in the food sector. For example, the level-IV vocational diploma in bakery, updated in 2012, stands out for its advanced approach. The curriculum highlights the importance for apprentices to understand the general principles of sustainable development. It also stresses eco-responsible practices in the supply chain, such as the purchase of local products and the consideration of the type of oil and margarine used. Similarly, the level-

V diploma in 'fishmonger' incorporates teaching on the prudent use of energy and incorporates fishing standards to ensure the preservation of this resource.

### **Adaptation (5/5)**

The integration of green skills dedicated to averting food waste and fostering sustainable food production into the VET Curriculum within the agro-food sector stands as a noteworthy and beneficial addition, significantly bolstering French sustainability endeavours.

The evolution towards incorporating green skills has been notably more gradual in the food and tourism sector when juxtaposed with the agricultural sector. Recognizing this disparity, it becomes evident that there is a particular need for targeted efforts to infuse sustainability practices into these industries. In response to this imperative, the VET Curriculum developed under the VET LOVES FOOD project emerges as a pivotal advancement. This curriculum not only addresses the current lag in green skill integration within the food and tourism sector but also serves as a strategic initiative poised to narrow the existing gap. It provides a unique opportunity to propel sustainability efforts within these industries, ensuring that they align with contemporary ecological considerations and contribute meaningfully to broader environmental goals.

## **Germany**

### **Relevance (3/5)**

Germany follows the European Union's recommendation on learning for the green transition and sustainable development, which sets out how sustainability can be integrated into all aspects of education and training to equip students and educators with the knowledge, skills and attitudes needed for a more sustainable and green economy and society. To help education and training institutions integrate sustainability into teaching and learning, as well as into all aspects of their activities, and to create a shared vision on the profound and transformative changes needed in education and training to achieve sustainability and the green transition.

The educational resource includes information on the green transition, especially those aimed at the prevention of food waste in the following areas: energy consumption, waste disposal, food culture and ethics, how to manage a restaurant from a more sustainable approach and sustainable diets.

In addition, this is done through the means of learning for the green transition and sustainable development a priority in education and training policies and programmes, and that opportunities are also provided for all students to learn about the climate crisis and sustainability as part of their formal and non-formal education.

In the field of green skills in the HORECA (Hotels, Restaurants and Catering) sector in Germany, there are several initiatives and platforms that facilitate the connection and exchange of knowledge between stakeholders and educational institutions.

#### [ECO-Catering Netzwerk.](#)

The ECO-Catering network in Germany seeks to promote sustainability in the HORECA industry. It offers events, workshops, and opportunities for industry players to share knowledge and best practices.

#### [Centre of Excellence for Sustainable Universities \(KNU\):](#)

The Competence Centre for Sustainable Universities supports educational institutions in Germany in the development of sustainable competences. It facilitates the connection between educational centres and the HORECA industry.

#### [Green Chefs Germany:](#)

Green Chefs is an initiative that focuses on sustainability in professional cooking. It offers training programs, events, and a platform for collaboration and knowledge sharing.

#### [B.A.U.M.E.V.](#)

B.A.U.M. (Bundesdeutscher Arbeitskreis für Umweltbewusstes Management) is an association that promotes ecological and sustainable management in companies. They offer events and networking opportunities for professionals and educational centres.

#### [DGE "Sustainability" Certificate Initiative:](#)

The initiative of the DGE (Deutsche Gesellschaft für Ernährung) promotes sustainability in food. The "Nachhaltigkeit" certificate is awarded to food establishments and catering services that meet sustainable standards.

#### [Office of Gastronomic Sustainability:](#)

The Office of Sustainability for Gastronomy aims to support gastronomic establishments in the implementation of sustainable practices. Offer resources, events, and opportunities for collaboration.

#### Bavarian Environmental Pact:

The Bavarian Environmental Pact is an initiative that brings together companies, including those in the HORECA sector, to work on sustainable practices. They offer events and resources for knowledge sharing.

#### **Adaptation (4/5)**

The VET LOVES FOOD curriculum can be a good asset for the integration of ecological skills into German vocational training curricula, as there is an ecosystem conducive to their natural insertion.

Initiatives and activities focused on the sustainable development of Horeca activity, among others, are a good basis for their implementation, although we have not found similar concrete initiatives if there is a line of work aimed at consolidating this area within the educational system and also in the future professional system.

#### **Greece**

##### **Relevance (3/5)**

Horeca (Hotel, Restaurant and Catering) vocational training in Greece, as in many other places, is undergoing changes to incorporate more sustainable and environmentally friendly practices. Green skills are essential today, as the industry looks to reduce its environmental impact and adopt more sustainable practices.

The importance of green skills within the Greek education system has been increasing as environmental awareness and the need for sustainable practices have gained relevance globally. Some aspects related to the importance of green skills in the Greek educational context:

Environmental Sustainability:

Green skills are aligned with the need to address environmental challenges and encourage sustainable practices. The integration of these skills into the Greek education system contributes to the formation of environmentally conscious citizens.

#### Global Relevance:

Given the growing global importance of sustainability, including green skills in education prepares students to actively participate in discussions and practices at the international level.

#### Fulfilment of International Objectives:

Greece, being a member of the European Union, is subject to EU objectives and guidelines in areas such as sustainability and environmental education. Integrating green skills can be part of efforts to meet these goals.

#### Development of Responsible Citizens:

Education in green skills contributes to the formation of responsible citizens committed to the conservation of the environment. These citizens can then apply their knowledge in various sectors, including hospitality.

#### Adaptation to Work Trends:

The inclusion of green skills in education responds to labor trends that value sustainability and corporate social responsibility. Professionals with green skills can be more competitive in the job market.

#### Interdisciplinary Approach:

Green skills often require an interdisciplinary approach that encompasses diverse areas of study. Integrating these topics into the education system can foster collaboration across disciplines.

#### Innovation and Sustainable Entrepreneurship:

Green skills are linked to innovation and sustainable entrepreneurship. Education that fosters these skills can inspire students to develop creative and sustainable solutions in their future careers.

#### Compliance with International Agreements and Commitments:

Greece, like other countries, has made international commitments related to sustainability and emission reductions. Green skills education can contribute to meeting these commitments.



Importantly, the integration of green skills into the education system is an evolving process and may vary depending on government policies, local initiatives, and implementation at the level of specific educational institutions. The promotion of green skills in education is essential to build a more sustainable society and prepare future generations to face environmental challenges. In the case of Greece, steps are being taken to embark on this path (International Organization Labor, 2023).

#### **Adaptation (4/5)**

The VET LOVES FOOD curriculum could be a good asset for the integration of green skills into the Greek VET curricula of hospitality training offerings, as there are no specific resources.

The development of a sustainable culture in Greece is incipient, promoted by policies of the surrounding countries within the European Union, so the work to be carried out must be intense for its implementation.

Adapting the VET LOVES FOOD Green Curriculum would certainly be difficult in Greece. However, on the other hand, given that there is no reference framework on green competences in the VET pathways of the HORECA sector in this country, in order to provide an efficient use of the result, the VET LOVES FOOD green curriculum could be readapted to the context of the country.

### **Hungary**

#### **Relevance (3/5)**

Overall, the found projects from Hungary exemplify efforts to integrate green skills development and food waste prevention into VET curricula within the agro-food sector, leveraging educational resources, hands-on training, mindset promotion, and stakeholder collaboration to drive sustainable practices and prepare future professionals for the challenges of a green economy.

The "Élelmiszermentési Nemzeti Akcióterv" (National Food Waste Prevention Action Plan) provides educational materials specifically tailored for VET institutions in the hospitality sector, addressing food waste prevention and sustainable practices. These resources offer guidelines for food businesses on food waste reduction and best practices for sustainable management (Magyar Élelmiszerbank Egyesület, 2023; Maradék Nékul, 2023).

Élelmiszermentés.hu - Élelmiszermentő Közösség (Food Rescue Hungary - Food Rescue Community) offers workshops and educational programs focused on food waste prevention strategies for aspiring chefs. By providing hands-on training and educational materials, this initiative contributes to developing green-driven approaches for future chefs.

Zöldségbasket Közösség (Vegetable Basket Community) promotes sustainable food practices and supports local farmers, indirectly fostering a change in mindset about sustainability among learners. Through its emphasis on local and seasonal food production, this initiative encourages individuals to adopt more sustainable dietary habits.

#### **Adaptation (4/5)**

The researched projects involve various stakeholders, including food businesses, NGOs, and educational institutions. This engagement fosters collaboration and dialogue between VET providers and socio-economic actors, shaping sustainable training proposals and ensuring alignment with industry needs and best practices.

### **Ireland**

#### **Relevance (5/5)**

Ireland's Vocational Education is developed through Education and Training Boards (ETB) that operate secondary schools, further education colleges, training centres and youth reach centres, with most of them providing Post Leaving Cert (PLC) Courses. These courses are 1 or 2-year vocational programs with work placements. Some of the courses available focus on the agro-food area, including Animal Care, Horticulture, Agriculture, Food and Nutrition. Also, ETB colleges provide apprenticeships in Farming, Horticulture, and Food and Beverage. Many ETB colleges in Ireland have introduced sustainability initiatives such as composting systems, recycling programs, and zero-waste cafeterias. There is also a program called [The Green Campus](#) operated by An Taisce that provides resources and certifications for schools that pursue sustainable activities and initiatives. Another example of a good practice is The Limerick and Clare ETB Green Innovation Hub which trains students in areas like regenerative farming, bioeconomy entrepreneurship, and sustainable food production. KWETB Curriculum Development Unit developed learning modules on organic horticulture, nutrition, and environmental studies for use by ETB colleges, and many PLC courses in agriculture, horticulture, food science, etc. provide training in sustainable food production practices that help prevent

waste. Also, some ETBs have set up training restaurants and food education hubs engaging stakeholders on sustainability (Construction, Quality & Green Skills, 2022).

Ireland approaches climate and environmental challenges through the European framework of The European Green Deal 2019 and the Osnabrück Declaration on Vocational Education and Training 2020. Both of these provided contexts for the development of Ireland's framework titled Green Skills for FET 2021-2030 which gives attention to some of the key areas of FET (Further Education and Training) needed to transition to a green economy. The national mandates related to green skills are also included in a variety of Irish programs such as Skills for Zero Carbon 2021, Housing for All 2021, Action Plan for Apprenticeships 2021-2025, Programme for Government 2020, Climate Action Plan 2021, and Future Jobs Ireland 2019, to which the Green Skills for FET 2021-2030 responds to, setting a strategic direction for green skills initiatives throughout the Irish FET sector (SOLAS learning work. 2020).

In 2021, the Irish government launched the Economic recovery plan meant for rapid job creation and economic growth after the Covid-19 pandemic. One of the priority areas of the program is Social and Economic recovery and job creation, and under it, further education and training will play a great role by supporting a work placement plan intended to reach 10.000 participants, but also by providing training to address climate and low carbon economy issues through the SOLAS Green skills action programme (CEDEFOP, 2021).

#### **Adaptation (4/5)**

Ireland's approach to sustainable practices within VET/FET courses is already evident. The country shows to be concerned with environmental issues, either by developing its frameworks towards green skills or by using European frameworks regarding sustainable development and/or VET/FET education.

As seen, many ETBs express concerns about these matters by introducing them in their schools through initiatives related to the VLF curriculum, such as composting systems, recycling, and zero-waste programmes.

This clearly shows that Ireland's educational system is open to developing further on the topic, and therefore, introducing the VLF curriculum into the ones they have in place.

## Latvia

### Relevance (4/5)

In Latvia, upper secondary education, ranging from 16-19 years old, follows the compulsory basic education, and it includes vocational education programs. These occur at vocational schools, technical schools, and specialised vocational secondary schools, with 1 to 4 years duration, depending on the type: vocational basic education or vocational secondary education (CEDEFOP, 2015).

Between 2011 – 2013, the percentage of students enrolled in the fields of Agriculture and Services was ~2.65, and ~24.6%, respectively.

Following EU policies, the Green Skills module in Latvia was updated in 2020, and since 2021 it has been included as a separate module, under lifelong learning competencies or integrated into professional competence modules, focusing on sustainable development and guaranteeing a sustainable future. Some of the topics approached are renewable natural resources, renewable energy sources and circular economy (CEDEFOP, 2021).

At a national level, to ensure harmony among all VET providers, a three-month special training course was provided to all management teams of VET providers, broadening the understanding of green issues, and encouraging VET institutions to link sustainability and the green course.

The Ministry of Education and Science also set up clear guidelines regarding the green component in the development and investment strategies, which includes achievable and measurable indicators for each activity. They also help schools perform self-assessment, monitor progress and ensure the quality of the work developed (Ministry of Education and Science Republic of Latvia, 2023).

The Sustainable Development of Latvia until 2030 strategy intends to change the paradigm in education, setting as their objective “to create one of the best educational systems in the EU and to become one of the leaders as regards the availability and use of adult education”. The priority long-term actions considering education focus on access to it, the potential of schools as centres of social networking, contextual education, use of ICTs, and lifelong education (SAEMIA of the Republic of Latvia, 2010).

A study from 2022 focused on plate waste from seven schools in the city of Rezekne, and evaluated the amount of food wasted after every meal by the students. The conclusions

achieved to prevent the generated waste were that school menus should also consider new cooking processes, to make the students more interested in consuming the food. In the same topic, many vocational schools have introduced waste sorting systems, set up compost boxes, and created reusable dish policies in canteens to reduce waste (Lonska et al., 2022).

Several vocational schools maintain gardens, where students apply sustainable growing methods and supply produce to their campus kitchens, and particularly, Riga Technical School teaches about organic food production while Liepāja Technical School teaches a course on sustainable food supply chains.

### **Adaptation (3/5)**

Latvia has an offer of VET education in the agro-food sector, however, from the research made, it doesn't seem to be very prominent, as the data presented before about the % of students also shows, and data couldn't be found regarding the resources used or taught.

There seems to have been an effort in the last years to implement measures regarding sustainable development within VET curricula, focusing on VET skills. However, these seem to be very general, having few mentions of food-waste prevention or the inclusion of specific topics within the agro-food study area.

Even the Sustainable Development Strategy, while considering education as a priority, doesn't mention the need to deepen the knowledge about resource-saving.

There is an understanding of the need to prevent food waste, as shown by the study presented before, but again, it does not focus on the learners, but on the catering sector instead.

This being said, Latvia presents few strategies within VET schools about the topics that the VLF curriculum covers, this seems to be a convenient moment to present such material to Latvia's education institutions because they are moving forward with the development and implementation of policies that focus on sustainable development and green skills. Thus, the VLF curriculum could be presented as supplementary material for vocational programs to enhance sustainability training.

## **Lithuania**

### **Relevance (3/5)**

Vocational education in Lithuania is included in the upper secondary education and its students range between 16 and 19 years old. Vocational schools offer 1-2-year training programs in agriculture, forestry, food processing, hospitality, and veterinary fields, while technical and specialised schools offer 3-4-year programs leading to technician qualifications in similar areas.

The [Environmental Education Project](#), executed by the Institute for Sustainable Communities, aimed to support the creation of environmental education curricula for middle schools and teachers' training colleges in Lithuania. The initiative involved providing training and technical assistance to teachers and community members interested in environmental education. Workshops, featuring collaboration between Lithuanian and American environmental educators, were conducted to introduce innovative teaching methods and materials to educators.

Vocational education and training (VET) qualifications, skills, and learning outcomes are established by Sectoral trade committees, and the government centrally develops programs that are implemented in all VET schools. This approach ensures consistency, guaranteeing that each course encompasses the essential general competencies and transferable skills needed for individuals entering the workforce (EDGE Foundation, 2023).

Despite this standardised framework, there is currently a gap in adequately addressing green skills within these curricula. Recognizing this, there are plans to revise, update, or create VET programs in the coming years, incorporating the necessary green skills. The Ministry of Education acknowledges the challenges of integrating green skills into VET, highlighting that it is a more complex process compared to the integration of digital skills. Digital skills are in high demand and consistently utilised in the workplace, driven by employer requirements. In contrast, the integration of green skills is progressing at a slower pace, despite government encouragement.

Aligned with the objectives of Agenda 2030 and the European Farm to Fork strategy, Lithuania actively participates in the [BSR Food Coalition](#) as a member. This initiative unites the Baltic States in promoting and scaling Farm to School program models. The project acts as a bridge between local farmers and public authorities, ensuring a regular supply of organic meals in schools and fostering an ongoing demand for nutritious food. The evolving framework is designed for the benefit of local and regional municipalities,



program practitioners, policymakers, development partners, civil society, community-based organisations, and the private sector alike.

A study from 2020 named “Public Attitude Towards Food Waste: The Case of Lithuania” concluded that the Lithuanians don’t have reliable information about food waste prevention, only superficial one about the food waste sorting system, which could be changed with the involvement of schools, universities, social activists, and NGOs in the education process of society about the value of food (Žičkienė et al., 2020).

Since 2014, the Lithuanian Children and Youth Center has been driving the "Sustainable School" program across all education levels. This initiative is geared towards fostering public awareness and equipping educational institutions with the knowledge and skills necessary to cultivate sustainable communities. The objective is to empower these communities to effectively manage resources by harmonising principles of environmental protection, social justice, and economic development. Since its inception, more than 200 educational institutions and over 20,000 students have actively engaged in the program. Their involvement includes in-depth research into the ecological footprint of their respective institutions and the implementation of diverse initiatives aimed at reducing their overall impact (HOBVERSE, 2023).

### **Adaptation (2/5)**

As presented by the previous research, the knowledge from the general population in Lithuania about food waste is lacking.

The schools that show to have included in their curricula topics like the ones addressed in the VLF curriculum are mainly higher education schools, existing a gap to what VET is concerned.

Notwithstanding the slow integration of green skills into Latvia's educational curricula, there are encouraging initiatives that underscore an awareness of the importance for sustainable practices within schools.

A strategic approach to presenting the VLF curricula involves collaboration with institutions already engaged in environmentally conscious initiatives.

Given the centralised nature of school curricula in Lithuania, it is advisable to initially introduce the VLF manual as a supplementary option. The success of this introduction can then be used as a basis for assessing the viability of formal implementation.

## Luxembourg

### Relevance (1/5)

Although it is true that, according to European Union's sources, as for a last update of 2023, the Luxembourg educative system, and especially VET education, have been reforming, one interesting fact is that there are little to no external sources of information addressing the greening of the education, both as a in general, and specifically in VET education (UNEVOC, 2017; Messerer, 2022; Eurydice, 2024).

### Adaptation (1/5)

Since there are not relatable sources of information, nor a demonstration of interest of the Luxembourg government in greening education in the country, it has been considered that the VET LOVES FOOD Green Curriculum could be completely difficult to implement, if not impossible.

## Malta

### Relevance (3/5)

First, it is important to remark that Malta is considered as a Small Island Developing State due to its limitation of natural

resources and size which contribute to economic, environment and social problems. Therefore, the especial status of Malta in terms of geographical dimension and population density are factors to be considered within this investigation, since they are two indicators of the leverage and capability of the government of Malta to implement effective measures for Education Sustainable Development, in general, and for food waste prevention. In Malta, economics is also a pressing issue for the government in order to carry out initiatives oriented towards greening the education system of the country. In this regard, several studies have demonstrated that there are no environmental and intercultural management instruments being used. There are some attempts at environmental measures but these are sporadic and not consistent (Chawla, 2018).

When addressing the question of whether there are VET Curricula for greening the education in Malta, no relatable sources have been found. Only one document have been found on the topic of providing Education Sustainable Development in the context of Malta, which focuses mostly on the renovation of the infrastructure of Malta's schools in order to save energy (Caruana & Midsuf, 2015).

## **Adaptation (2/5)**

In terms of adaptability of the VET LOVES FOOD Curriculum, on one hand, one could say that, since it is an open resource, it would be of great use for the implementation of Education Sustainable Development means in Malta's VET education sector. In the end, this open resource provides comprehensive, neat, and clear information on what are the most required green skills in the labour market for those who teach and study VET degrees related to the HORECA sector, which could serve as basis for Malta to start tailoring a green VET curriculum adapted to its national context. However, the information on the country context is very limited, and, moreover, the socio-economic dynamics of the country do not foresee that Malta will have the capability of creating a green strategy for education, as in general, and for VET education specifically, in the short run.

## **Netherlands**

### **Relevance (3/5)**

In the Netherlands, multiple establishments are providing professional higher education in the agricultural field (HAO). These HAO institutions are integrated into the realm of higher vocational education, which is distinct from secondary schools. HAO institutes are comparable to higher education colleges. The Dutch higher education system follows a binary structure, comprising higher vocational education (HBO) aimed at professional education, and universities catering to academic pursuits (adapted from Mulder & Kupper, 2006).

The VET system in the Netherlands encompasses a variety of education tiers, spanning from secondary vocational education (MBO) to higher vocational education (HBO) and university-level education (WO). In the field of agrifood, the majority of VET programs are situated within the MBO level, where students engage in hands-on training and education that closely aligns with industry demands. Regional education centres known as Regional Training Centers (Regionaal Opleidingen Centrum or ROC) provide MBO programs. These programs typically extend for two to four years and offer students a blend of classroom instruction and practical training. In the agrifood domain, MBO programs encompass an extensive array of specialisations, including agriculture, horticulture, food processing, animal care, agribusiness, and more. These programs

encompass diverse subjects such as sustainable farming methodologies, food safety, animal welfare, and agribusiness management.

The green education policy advocated by the Ministry of Agriculture encapsulated in the slogans: 'green education needs to be modernised, innovative, globally oriented, and appealing', necessitates a comprehensive refinement of both content and educational a According to the information previously gathered, the VET LOVES FOOD Green Curriculum could be a great resource to be implemented in Denmark. The country has shown a clear focus on greening its education system, especially VET education, through mapping existing needs on green skills within the sector. Therefore, in this specific aspect, the Green Curriculum can be a great asset for the country to contrast and establish cross-cutting cleavages between their mapping of needed green skills and those addressed at an European level in the VET LOVES FOOD Green Curriculum.

In addition, as afore-mentioned, seemingly, the focus of Denmark's efforts in greening VET are widely oriented towards the agro-food sector, putting an extra effort in agriculture and horticulture, which, although is quite related to the HORECA sector, it does not address what sustainable measures have to be taking in a post-harvesting phase. In this regard, the VET LOVES FOOD Green Curriculum can be of great help as a continuation of the mapping of green skills needed in Denmark already gathered by the country.

In general, the VET LOVES FOOD Green Curriculum can serve as a great tool for Denmark's VET education, since it can not only orient the needs on green skills and competences at an European level, but also it can help filling the gaps in the mapping on green skills needs already made by the country's government. Besides, it is important to remark that the VET LOVES FOOD Green Curriculum's focus is on the HORECA sector, which, according to the data previously provided, makes it a great tool to align student's competences in the sector and labour market needs. Is that to say, since Denmark's VET system is based in Work Based Learning (WBL), the integration of the competences of the Project's Green CV could, effectively, lead towards a smoother transition of the students from the theoretical to the practical approach of their learning experiences. approaches. The Minister acknowledges this and emphasises that alongside subject-specific knowledge, a demand for educational expertise will also emerge within this process of innovation (adapted from Mulder & Kupper, 2006).

This environmentally conscious curriculum thereby transcends the confines of traditional agricultural education, encompassing all facets of the educational system linked to agriculture, food, nature, and the environment. As a result, the focus on green education suddenly broadens, prompting consideration of primary, secondary, higher, and even adult education as educational subsystems capable of addressing the policy objectives prioritised by the Ministry of Agriculture (adapted from Mulder & Kupper, 2006).

With regards to green skills, numerous vocational education, and training (VET) establishments within the Netherlands incorporate modules focused on sustainability within both agrifood and HORECA curricula. These modules encompass subject matter including energy-efficient methodologies, waste reduction tactics, sustainable sourcing, and ethical reflections about food production and consumption. Furthermore, VET initiatives frequently impart practical instruction to prospective chefs, equipping them with skills to reduce food waste through adept culinary techniques, portion management, and inventive ingredient utilisation. Particularly, VET students are taught innovative cooking methods that utilise food parts often discarded, such as root-to-stem or nose-to-tail cooking, thus effectively managing food waste prevention. Ethical aspects are also integrated in some VET curriculums and certain VET initiatives extend certifications in sustainable cooking or the reduction of food waste, granting students specialised competencies acknowledged within the industry.

As the Netherlands presents a strong commitment to including sustainable and green skills in the agrifood curriculum, Result 1 will be relevant to this education system although not highly innovative.

**Sustainable Hospitality Management:** This program focuses on sustainable practices in the hospitality industry. Students learn about energy-efficient hotel operations, waste reduction, sustainable sourcing of ingredients, and eco-friendly guest services.

**Green Cuisine and Culinary Arts:** In this course, aspiring chefs are trained in sustainable cooking practices. Students learn to create dishes using locally sourced, seasonal ingredients, reduce food waste, and implement energy-efficient kitchen operations.

**Eco-Friendly Hotel Operations:** This vocational program covers sustainable practices in hotel management. Students study energy conservation, water management, waste reduction, and green building practices for hospitality establishments.

**Organic Catering and Event Management:** Students in this program learn how to organise and manage events with a focus on sustainability. The curriculum covers sourcing organic and locally produced ingredients, minimising event waste, and eco-friendly event planning.

**Waste Management in HORECA:** This course is designed to teach waste reduction and management strategies specifically tailored to the HORECA sector. Students learn about composting, recycling, and sustainable packaging solutions.

### **Adaptation (4/5)**

The exemplary VET system in the Netherlands serves as a commendable model for educational systems worldwide. The VET curriculum crafted within the VET LOVES FOOD project (Result 1) represents a pioneering approach in aligning education with pressing environmental and societal needs. Its potential for adaptation and transferability to various VET courses is a testament to its versatility. The Netherlands, with its already robust educational infrastructure, could serve as a launching pad for this innovative curriculum to be integrated into different educational programs. This adaptability has the potential to optimise and enhance the existing array of educational offerings in the country.

By incorporating modules related to food waste prevention and sustainable food production, VET students can be equipped with skills that are not only relevant to their respective fields but also contribute to larger global sustainability goals. This kind of interdisciplinary and forward-thinking curriculum ensures that students are not only technically proficient but also socially and environmentally responsible.

In essence, the adaptability and transferability of the VET LOVES FOOD curriculum present a unique opportunity to reinforce and elevate the educational system in the Netherlands. By incorporating green skills and a focus on sustainability, the curriculum not only enhances the skill set of VET students but also contributes to the broader goals of creating a more environmentally conscious and socially responsible workforce. This initiative stands as a beacon for the potential positive impact that education can have on addressing pressing global issues.

## **Poland**

### **Relevance (4/5)**

The VET system in Poland is distinguished by its centralised structure, organised across three distinct governance levels. At the national level, ministries play a pivotal role in shaping and overseeing the overarching framework of vocational education. Regionally, school superintendents take on a key responsibility, with a particular emphasis on pedagogical supervision to ensure the effective implementation of educational strategies. Additionally, at the county level, the management of schools falls under the jurisdiction of powiats, contributing to the local administration and coordination of educational institutions.

A noteworthy development within the Polish VET landscape is the integration of green skills into the core curricula and educational programs for various vocational occupations. These green skills, deemed essential across diverse professions, encompass a comprehensive understanding of principles related to environmental protection. This includes not only the theoretical knowledge but also practical competencies that involve adhering to environmental protection regulations. Furthermore, the incorporation of green skills involves actively addressing and mitigating environmental threats in the daily organisational aspects of workspaces and the execution of professional responsibilities.

In essence, this approach ensures that individuals undergoing vocational education and training in Poland are equipped not only with the technical skills necessary for their specific fields but also with a heightened awareness of environmental considerations. This integration of green skills aligns with the broader global emphasis on sustainable practices and underscores Poland's commitment to fostering environmentally responsible professionals across various sectors.

Poland is in the process of establishing 120 Sectoral Skills Centers (SSCs) focused on industries integral to the green transition. These industries encompass a wide range, including various forms of renewable energy, environmental protection, environmental engineering, and waste management. These centres are envisioned as fostering enduring collaboration between businesses and vocational education across all levels. Their primary objective is to ensure the availability of well-trained personnel capable of meeting the demands of the contemporary economy across diverse industrial sectors.

The SSCs will be tasked with a multifaceted approach, encompassing innovation, development, education, and training activities. This includes a concerted effort to enhance the transfer of knowledge and new technologies to educational institutions.



Moreover, these centres will play a pivotal role in promoting ecological and digital transformation. Practical training initiatives for youth, upskilling and reskilling programs for adults, sector-specific training for VET trainers, and the preparation of individuals with disabilities for employment in specific industries will all feature a mandatory component dedicated to digitization and green transformation. This deliberate inclusion aims to cultivate the learners' proficiency in both green skills and digital skills, aligning them with the evolving needs of the workforce and industry.

### **Adaptation (4/5)**

The integration of green skills oriented to food waste prevention and sustainable food production into the VET Curriculum within the agro-food sector represents a noteworthy and valuable asset for advancing Polish initiatives in sustainability. This transference of this curriculum could be very important in the broader context of Poland's ongoing efforts to address environmental challenges and align its practices with global sustainability goals. The tailored curriculum not only reflects an awareness of the environmental impact associated with the agro-food sector but also signifies a concrete step towards integrating sustainable principles into vocational education.

The deliberate focus on preventing food waste is crucial, given the substantial environmental footprint associated with wasteful practices in the food industry. Equipping VET students in the agro-food sector with the knowledge and skills to minimise waste contributes directly to more sustainable and resource-efficient practices.

Simultaneously, the emphasis on promoting sustainable food production underscores a commitment to environmentally conscious farming and food processing methods. This involves educating individuals on practices that prioritise biodiversity, soil health, and water conservation, fostering a holistic understanding of sustainable agricultural practices.

## **Romania**

### **Relevance (3/5)**

Romania has taken steps towards the modernization of its education system. However, there is still no systematic, comprehensive and coherent blueprint for this reform process.

To date, the vocational training system is characterised by a high degree of centralization, poor school infrastructure (due to underinvestment over many years), a lack of well-

trained administrative staff in the agencies responsible for vocational training, a deficit of well-qualified trainers/trainers, and the existence of outdated and overly specific curricula in most schools.

One of the main obstacles to the continuation of reforms is the scarcity of economic resources.

The main priorities for the Romanian government are:

- To provide a comprehensive regulatory and institutional framework for vocational training.
- Decentralise the management of the created system.
- Increase financial resources through a system of participatory financing, bringing together funds from the central budget, local governments and other state and private resources, and also creating a fund for vocational training.
- Create an information system and mechanisms to improve the demand for and supply of vocational training at national, regional and local level.
- To base the training system on professional levels, as quality criteria.

In Romania, measures are being taken to achieve sustainability standards aligned with other European countries in the area, among the activities we find the following:

**Circular Economy in the Food Industry:** In Romania, several companies in the HORECA sector are adopting circular economy practices. These practices include reducing food waste, using biodegradable packaging, and promoting local and seasonal foods.

**Sustainability Certification:** Some hotels in Romania have obtained sustainability certifications, such as Green Key certification. This certification is awarded to hotels that meet certain sustainability criteria, such as efficient use of energy and water, proper waste management, and promoting environmental awareness among guests.

**Renewable Energy Initiatives:** Some hotels and restaurants in Romania are investing in renewable energy, such as solar and wind power, to reduce their carbon footprint.

**Sustainability Training:** There are sustainability training programs aimed at professionals in the HORECA sector in Romania. These programs teach participants how to implement sustainable practices in their daily operations.

In Romania, there are several initiatives and platforms that focus on developing green skills and providing resources to external stakeholders:

**Skills and Jobs for the Green Transition:** This project by CEDEFOP explores the implications of the European Green Deal on jobs and skills in the EU. It investigates the expected impact of environmental and climate change policies on future skills demand within and across sectors, and provides insights for effective training and education policies and initiatives.

**Learning for the Green Transition and Sustainable Development.** This initiative by the European Education Area supports EU Member States in their efforts to equip learners and educators with the knowledge, skills, and attitudes needed for a greener and more sustainable economy and society. It also helps education and training institutions to integrate sustainability into teaching and learning and across all aspects of their operations.

**Energy Stakeholders' Dialogue in Romania.** This event hosted by the European Commission Representation in Romania (EC REP) and the Directorate General for Energy of the European Commission (DG ENER) facilitated an online dialogue with stakeholders in the energy field from the public, private, and civil society sectors in Romania. The dialogue focused on the Fit for 55 package/decarbonisation, just transition, and security of supply issues.

These initiatives provide a space for sharing approaches and methodologies to develop green skills and offer attractive resources to external stakeholders in Romania. They aim to, promoting a greener and more sustainable future.

These initiatives show the commitment of the HORECA sector in Romania to sustainability (Instituto de Desarrollo Productivo de Tuctumán, 2018).

### **Adaptation (1/5)**

There is a growing sensitivity in the field of sustainability in Romania, vocational training is immersed in an adaptation evolving to European standards, it enjoys a certain prestige, however there are no initiatives in which skills are protagonists, this is why the approach of the VET Loves Food project would bring great value to the development of green skills within the Romanian training system.

## Slovakia

### Relevance (3/5)

When it comes to food loss and waste prevention, Slovakia set a national-level objective to prevent the generation of food losses and food waste along the whole food supply chain, from primary production to the final consumer. In particular, the Ministry of Agriculture and Rural Development cooperates closely with the Ministry of Environment, the National Agricultural and Food Centre – Food Research Institute and the Statistical Office in order to collect data on food losses and food waste (EU Food Loss and Waste Prevention Hub, 2023).

In 2016, the Ministry of Agriculture and Rural Development of the Slovak Republic adopted a plan for prevention of food waste, including specific measures such as:

The elaboration of a list of causes of food loss and waste in individual segments of the food chain, together with a proposal for the possibility of mitigating their impact on waste or food waste (e.g. optimisation of production processes, application of the best available technologies, etc.)

Encouraging changes in behaviours and habits (through subsidies to investments, economic incentives, price signals, taxes, sanctions, benchmarking etc.) and encouraging the most efficient uses of food losses and waste (e. g. the use of former food as feed in accordance with applicable legislation)

The establishment of a platform for cooperation to quantify and reduce food loss and waste

Simplification of the rules for donating and/or handing over foods past their minimum durability date for feed purposes, as well as the adoption of provisions facilitating food donations for charitable purposes.

Food waste prevention measures are also included into other programs (see below). For example, primary producers are allowed to sell small quantities of products to the final consumer or to local retail establishments directly supplying the final consumer. In the case of plant commodities, fruit and vegetables that do not meet certain quality requirements (unsatisfactory shape, size) can also be sold in this way. In addition, these primary producers can supply their products to school canteens as part of the school programs.

Several activities to raise awareness on the issue of food loss and waste have been organised, such as exhibition stands and discussion forums. The Ministry of Agriculture and Rural Development in collaboration with the National Agricultural and Food Centre has prepared informative materials for various stages of the food supply chain, containing guidelines, instructions, examples of good practice, etc. that can be used to provide information about food losses and waste during exhibitions and other events at all levels.

According to “Greener Slovakia”, the environmental policy strategy of Slovakia for 2030, environmental education and training have been in the long term an underestimated social need in Slovakia, lagging behind the needs of today’s society. Despite the wide possibilities of realisation of environmental education and training, it is necessary to state that the environmental awareness of citizens in Slovakia is still insufficient and does not lead to a change of behaviour and values in the context of sustainable development.

A formal environmental education in Slovakia is concentrated in school-type facilities and it is coordinated by the Ministry of Education, Science, Research and Sport of the Slovak Republic. It is included in the objectives, performance and content standards of the innovative state educational program, in which it is defined as a cross-cutting theme. It can be implemented as part of the curriculum content of the school subjects, through separate projects, seminars, teaching blocks and, last but not least, it can form a separate subject within the framework of optional lessons.

Most VET programmes are provided at upper secondary level. Upper secondary general education graduates and the vast majority of secondary VET graduates receive the matura school leaving certificate allowing access to higher education. In 2015, a reform on “dual VET” was introduced: these reforms provided work-based learning in companies based on contracts with individual learners. There is no specific information on the role played by the HORECA, tourism and sustainability sector/industry in work-based learning in collaboration with educational institutions. Slovakia is in the process of setting up a VET infrastructure to build labour market needs into the planning of training provision at the local and regional levels, but this is in the early stages of development, and it is not specifically outlined which sectors are involved.

At the same time, the Slovak Agriculture University in Nitra is the epicentre of the studies in the field of agriculture and food. The University offers a wide range of possibilities at its six faculties. The University awards degrees in 40 bachelor, 32 master and 23 doctoral

study programmes in traditional, as well as modern fields of plant and animal production, biodiversity, ecology, food safety, sustainable and regional development, the use of alternative sources of energy and others. Study programmes are supplemented by quality foreign language training, access to information and communication technologies, as well as to a wide range of professional training courses. The University is an active player in the European and even global education area because of its educational and research activities. Its aim is to be a modern and open university that reflects the current needs of the agrifood sector in local, regional and global scale.

Some concrete examples of national-level initiatives and programs for food waste prevention and food waste tackling:

The National Platform for the Prevention of Food Losses and Food Waste, established by the Ministry of Agriculture and Rural development, serves as a means of communication and exchange of information and experiences between stakeholders and supports all actors involved in the prevention of food waste.

Waste prevention program for the years 2019-2025 highlights the need to prioritise waste prevention and food waste per se before other options, in line with the waste management hierarchy. Two key goals of the various sets are to reduce the amount of mixed municipal waste by 2025 by 50 % compared with 2016 and to reduce the amount of biodegradable waste in mixed municipal waste by 60 % by 2025 compared with 2016.

Act of the National Council of the Slovak Republic No 152/1995 Coll. on foodstuff as amended (§ 6 par. 7) was established in order to facilitate food donations, allowing tax breaks for food business operators that donate food under specific conditions.

A lecture on food waste measurement in school catering facilities was presented in a professional seminar for school canteen managers entitled “Individual approach to child nutrition and food quality from Slovak regions” (European Environmental Agency, 2021).

### **Adaptation (3/5)**

Slovakia’s national level commitment to preventing food losses and waste, as evidenced by the various measures and programs, provides a solid foundation for proposing the integration of relevant content into VET curricula in the agrifood, tourism and HORECA sectors. Moreover, the collaboration framework portraying the Ministry of Agriculture

and Rural Development, the Ministry of Environment, and other stakeholders can lay the foundation for the active involvement of educational stakeholders, fostering initiatives focused on skills and knowledge in the sector at stake. For instance, a collaboration with similar initiatives such as the one organised by the Slovak Agricultural University in Nitra presents an opportunity to align higher education studies with VET programs, ensuring the seamless transition for students interested in further education. Finally, the existence of platforms e.g., the National Platform for the Prevention of Food Losses and Food Waste can be pivotal for VET institution and educational institutions as a whole to network with industry stakeholders and stay updated on best practices.

However, the overall gap in environmental awareness poses a challenge. Integrating environmental education in schools and VET centres may face resistance due to prevailing attitudes and still insufficient awareness of citizens in sustainability issues related to food waste and food loss prevention. If there is a perception that careers in agrifood and hospitality sectors are undervalued, attracting students to relevant VET programs could be challenging. Therefore, efforts will be needed to change perceptions and highlight the importance of these fields.

In conclusion, while Slovakia's national commitment and collaborative initiatives create a conducive environment, challenges related to environmental awareness, curriculum integration, and practical exposure need to be addressed for the successful adaptation of VET curriculum in the agrifood sector.

## Slovenia

### Relevance (5/5)

Due to its natural resources, clean environment and rich culinary tradition, Slovenia fulfils all conditions for the development of sustainable gastronomy, which has already been promoted by numerous restaurants and tourist farms. Slovenian cuisine is based on ingredients found in our immediate surroundings. Modern approaches to cuisine combine with elements of culinary tradition, Slovenian restaurants are working closely with farmers and suppliers, and dishes are mainly prepared with delicious local ingredients. The journey from the green countryside to urban areas is really short. The slogan "from garden to table" is not used just for marketing purposes, as the issue of the traceability of ingredients is taken very seriously (Climate4Change, 2023).



Slovenia strives to reduce waste in all areas, especially environmentally harmful waste, such as single-use plastic and food waste. Many restaurants have already been tackling this challenge, while more and more events in Slovenia follow the "zero waste" concept. An example of good practice is the "Open Kitchen" food market in Ljubljana, which gave up the use of single-use plastic products this year (EU Food Loss and Waste Prevention Hub, 2023).

Slovenia can rely on the Statistical Office of the Republic of Slovenia (SORS), as the entity responsible for the collection of data on food waste according to specific stages of the food supply chain: food production (including primary production), food distribution and trade, catering and food services, and households.

A national Strategy to reduce food loss and food waste in the food supply chain was implemented, named "Respect food, respect the planet" with the overarching goal to change the way of thinking in society. More specifically, the strategy foresees specific priorities:

Prevention of food losses, food surpluses and food waste (production and consumption) - through optimisation of stocks, appropriate technology, monitoring of the amount of food waste, awareness and more.

Reducing the amount of food waste by redistributing and using surplus food - by donating food for processing into new products (food, non-food) or diversion into animal food (which is not intended for human consumption)

Adequate handling of food waste-aerobic (composting) and anaerobic (biogas) treatment, other waste treatment procedures (e.g. bioeconomy, energy recovery).

In order to pursue this goal, it is pivotal to respect and treat food and the natural resources needed for its production. In order to be successful in all three areas of operation of the strategic objectives, all members of the food supply chain, scientific and economic professions and policy makers must: cooperate, follow and develop innovations in the search for solutions, build attitude and respect for food, preserve natural resources for the preservation of the planet, acquire competences for their own options for action to prevent and reduce food surpluses and the use of waste food and finally share freely available knowledge and data for decision-making (United Nations Environmental Programme - UNEP, 2021).

On the occasion of the International Day of Awareness of Food Loss and Waste 2020, the Slovenian Ministry of Agriculture, Forestry and Food, together with other stakeholders of the agri-food chain, signed a Statement of Intent to enhance cooperation in reducing food losses and waste in the food supply chain. Stakeholders expressed their common interest in and support of the goals of the Slovenian national strategy for less food losses and food waste and their commitment to a respectful, responsible and sustainable from-farm-to-fork approach to food. In 2020, 7 key stakeholders signed the statement: Chamber of Agriculture and Forestry of Slovenia, Cooperative Union of Slovenia, Chamber of Commerce of Slovenia - Chamber of Agricultural and Food Companies, Chamber of Crafts of Slovenia, Chamber of Commerce of Slovenia, Chamber of Tourism and Hospitality of Slovenia, Consumers' Association of Slovenia and the Ministry of Agriculture, Forestry and Food.

The Slovenian Strategy to reduce food loss and food waste in the food supply chain "Respect food, respect the planet": Reduce the generation of food waste in primary production, in processing and manufacturing, in retail and other distribution of food, in restaurants and food services as well as in households as a contribution to the United Nations Sustainable Development Goal to reduce by 50% per capita global food waste at the retail and consumer levels and to reduce food losses along production and supply chains by 2030.

For restaurants and catering activities, targeted actions have been suggested, such as:

1. develop and disseminate educational and guidance materials for businesses
2. organise, enable and implement information and/or campaigns, such as, e.g.: "take all you can eat - but don't forget eat all you take"
3. introduce a possibility (including consumer information) for the catering companies to allow consumers to take home the leftovers
4. inform the local community about catering services that offer leftover food that is still good to be used to people in need.

In the realm of Slovenian Vocational Education and Training, school restaurants and school hotels have been established for the needs of more efficient practical education (training) in the field of catering and tourism. The most recognizable among them are School hotel Astoria (VGS Bled), Restaurant Kult 316 (BIC Ljubljana) and Restaurant Sedem (VSGT Maribor). Restaurant Sedem is a professional and business incubator of

the Vocational College of Hospitality and Tourism Maribor, which is actively involved in the model of practical training of VSGT students, aiming to actively train staff, which will be a key creative and sustainable professional generator of the future, through its activities. In doing so, it is essential to strive towards implementation of a high-quality catering service, which consists of a mix of tangible and intangible elements and the given environment.

“Srednja šola za gostinstvo in turizem Celje” (Secondary Vocational School for Catering and Tourism Celje) is one of the most modern vocational schools in Slovenia offering 5 educational programmes for the catering and tourism sector (about 700 full-time students and adults) as well as training programmes for National Occupational Qualifications or short courses tailored to the needs of individual hotel and catering enterprises. The teacher and student teams of SŠGT Celje participated in numerous outside catering events on the local, regional and national level (e.g. events during the 6- month presidency of Slovenia of the EU, world congresses in Ljubljana, reception of the British Queen Elisabeth in Slovenia etc.)

The Higher Vocational College for Hospitality, Wellness and Tourism of Bled cooperates with Hotel Astoria, which provides practical training to students of higher education programs at the Institute and to students of other secondary and higher education study programs.

The vocational College of Hospitality and Tourism Maribor provides two main study programmes: catering and tourism and wellness. The hospitality and tourism offer includes among obligatory courses: environment preservation, legal norms, fundamentals of gastronomy, cookery & kitchen management, service & restaurant management, fundamentals of cookery, catering and service, hospitality and food service operation, lodging and foodservice operation, food & beverages.

As part of its work on food waste, the EU-funded LIFE IP Care4Climate project aims to establish baseline data for food waste at each stage of the food supply chain and to offer insights on household food waste levels in 2021 (e.g. edible vs. inedible food waste). The methodology that will be followed to measure food waste levels in Slovenian households is a combination of compositional analysis of bio-waste and the diary method. Moreover, LIFE IP CARE4CLIMATE through awareness-raising, education and training of key stakeholders, will encourage the implementation of measures to help Slovenia meet its

greenhouse gas emission reduction targets by 2020 and 2030. The project covers six main areas, one of which is food waste.

The Slovenian Research Agency and the Slovenian Ministry of Agriculture, Forestry and Food funded the project 'Food, not waste: prevention, reduction and use of waste food' (2020-2022), which focuses on food waste sources across various stages of the food supply chain and different management models in order to prevent and reduce food surpluses and to revalorise food waste.

### **Adaptation (5/5)**

Based on information collected, it appears that Slovenia has a strong commitment to sustainable gastronomy, waste reduction, and a responsible approach to food production. This provides a favourable environment for adapting the VET curriculum in the agrifood sector to focus on green skills, food waste prevention, and sustainable food production. In particular, the collaboration between the Ministry of Agriculture, Forestry and Food and various stakeholders in the agri-food chain demonstrates a collective effort towards sustainable practices, emphasising the importance of stakeholders' cooperation as embedded in the VET LOVES FOOD project.

In particular, the emphasis on sustainable gastronomy in Slovenia aligns well with the goal of promoting green skills. The VET curriculum can incorporate modules that teach students about sustainable practices in the food industry, such as sourcing local ingredients, reducing environmental impact, and promoting a "from garden to table" philosophy.

Slovenia's commitment to reducing waste, especially single-use plastic and food waste, provides a solid foundation for integrating modules on food waste prevention in the VET curriculum. This can include strategies for optimising stocks, implementing appropriate technology, and creating awareness campaigns on minimising food waste in various stages of the supply chain. Moreover, the existence of a national strategy demonstrates a comprehensive approach to tackling food waste issues. The VET curriculum can be aligned with the specific priorities outlined in the strategy, focusing on prevention, redistribution of surplus food, and proper handling of food waste through composting and other treatment procedures.

The suggested actions for restaurants and catering activities, such as developing educational materials, organising campaigns, and informing the local community can be incorporated into the curriculum, as well as in the framework of Result 3 – the European Hub, to equip students with the knowledge and skills needed to implement similar practices in their future careers.

Given the specific context of Slovenian VET, the VET LOVES FOOD curriculum in the agrifood sector, can be generally adapted, aligning and complementing existing training pathways.

In conclusion, the Slovenian context provides a conducive environment for adapting a VET curriculum in the agrifood sector to focus on green skills, food waste prevention, and sustainable food production. The existing initiatives, strategies, and stakeholder collaborations create a foundation for practical and impactful vocational training in these areas.

## Sweden

### Relevance (4/5)

The Swedish government oversees the education system, establishing policies for all education levels. While goals and learning outcomes are centrally defined, their implementation is decentralised. The Ministry of Education and Research manages various education fields, including upper secondary schools, adult education, and higher vocational education and training (VET). The government and the Swedish National Agency for Education develop steering documents for upper secondary schools and municipal adult education. Each vocational program has a national program council that advises on adaptation, development, and modernisation. These councils include social partners, industry representatives, and sometimes public authorities. The Swedish National Agency for Higher Vocational Education (MYH) is responsible for higher VET, approving training providers that collaborate with the workforce to design and deliver programs. The introduction of any new higher VET program requires final approval from the government (Livsmedelsverket, 2023).

County councils oversee folk high schools, which are small adult residential schools, and manage specific upper secondary school-level training programs in healthcare, agriculture, and forestry. They can collaborate with multiple municipalities to form joint boards for operations like upper secondary schools. Legislative responsibility for

education, including vocational education and training (VET), lies with Parliament and the government. The Ministry of Education and Research is mainly responsible for public education, covering preschool, compulsory school, upper secondary school, adult education, and more. Exceptions include specific areas like employment training under the Ministry of Employment and training for officers and police under the Ministries of Defence and Justice (Forskarfredag, 2023).

### National Action Plan

In February 2017, the Swedish government delegated the task of reducing food waste to the Swedish Food Agency, collaborating with the Swedish Agency for Agriculture and the Swedish Environmental Protection Agency until 2019. The assignment involved formulating an action plan in close partnership with stakeholders to establish a long-term strategy aligning with global sustainability goal 12.3 in the UN's Agenda 2030. This initiative led to the creation of the National Action Plan, "Fler gör mer" (More do more), a collaborative effort between the Swedish Food Agency, the EPA, and the Board of Agriculture. The plan, in line with SDG 12.3, features 42 recommended measures addressing national goals, sector-wide collaboration, changes in consumer behaviour, and advancements in inquiries, research, and innovation, illustrating a comprehensive and concerted approach to combat food waste in Sweden.

### Food Waste Experiment

In the Food Waste Experiment, students played a role in training a mobile app's artificial intelligence to recognise different dishes in the school canteen. They then used the app to learn about the environmental impact of various lunch menu items and to track how much food they discarded. The recently released results reveal a 16% decrease in food waste over the two weeks of the experiment. On average, each dish saw 19.85 grams of food waste, which is 27% less than the 27 grams reported in a 2019 survey on plate food waste in Swedish schools conducted by the Swedish National Food Agency.

### SLU Food Waste Course

The main goal of the course is to provide students with a broad understanding of food waste at various stages of the food chain. This includes understanding why and how it happens, the resulting consequences, measures to reduce it, and ways to use it in by-products and nutrient recycling. Additionally, the course aims to enhance students' ability

to apply scientific methods in managing food waste. It covers the occurrence and management of food waste across the entire food supply chain, encompassing primary production, processing, manufacturing, distribution, retail, restaurants, food services, and households. The course explores food waste issues from different perspectives, considering ethical, social, economic, and environmental aspects both locally and globally (SLU, 2020).

#### **SvinnGott Hotel Collaboration:**

A group of hotels in Sigtuna has teamed up to repurpose hens that would typically be discarded after egg production. This collaborative network has created a set of recipes known as SvinnGott, offering various ways to cook hen and make use of other commonly wasted food items (1909 - Sigtuna Stats Hotel, 2023).

#### **Adaptation (4/5)**

Sweden has an excellent system for teaching job skills and is a good example for the world. The unique project called VET LOVES FOOD, especially the part called Result 1, created a new and smart way of teaching. It's a creative and pioneering method that connects education with significant environmental and social needs. This unique curriculum, designed for job training, can be easily used in different courses, making it very flexible and useful for Sweden's education. This adaptability has the power to make Sweden's education even better and more enjoyable

By adding lessons about making food in a way that's good for the Earth and not wasting it, the VET LOVES FOOD curriculum can help students learn valuable skills for their jobs. It also helps the whole world by supporting big goals for taking care of the environment.

In short, the VET LOVES FOOD curriculum is flexible and can make Sweden's education system better. It teaches students skills that care for the environment, preparing them for jobs while helping the world. This program is like a guide showing how education can make a positive difference in Sweden's significant challenges.



## RESULT 2 – VET LOVES FOOD HANDS-ON MANUAL FOR FOOD WASTE PREVENTION

The hands-on Manual is a comprehensive practical manual for preventing food waste and valorizing traditional recipes and local products for professionals, trainers and private citizens.

The Hands-on Manual for Food Waste Prevention can be featured as: a) a tool for food professionals to adapt traditional recipes following a zero-waste approach; b) a tool to promote a 0 km approach and the culture of food waste prevention and management; c) a tool for food waste prevention methodologies and techniques to be addressed in VET hospitality; d) a tool to activate stakeholders in the challenges of attaining SDGs, raising awareness on food waste prevention and management, and on sustainability.

According to the previous description, the following countries have been analysed:

### Austria

#### Relevance (3/5)

Austria's government has since several years committed itself to create a more and more sustainable society and environment.

The study focused on the more official tools and manuals aiming at reducing food waste and enhancing the sustainability level of the whole HORECA industry.

At the time being, the main source for preventing food waste, is embedded in the Federal Waste Management Plan. This national waste prevention programme is updated regularly, at least every six years, it applies to the whole of Austria and invites all those concerned, whether in the operational or private sphere, to be involved in the local, regional and national implementation (Federal Republic Ministry of Austria - Climate Action, Environment, Energy, Mobility Innovation and Technology, 2023).

Around 90 measures cover the focus areas of construction waste, food waste, re-use and prevention in companies, organisations or households, and the new focus areas to be added are plastics and packaging as well as textiles (Australian Hotelier Association, 2023; European Environment Agency - EEA, 2023).

The “Food is precious!” initiative advocates careful handling of food. In this regard: The earlier, the better! Schools and extracurricular groups and organisations are supported in

sensitising children to the topic of food, with extensive educational materials and worksheets.

The “United Against Waste” initiative addresses food waste prevention in gastronomy, accommodation and communal catering. Companies in this area as well as the Federal Government, the states, science and non-governmental organisations jointly pursue an ambitious goal: Preventable food waste in industrial kitchens is to be gradually reduced by half by 2030.

Other green practices applied to the HORECA sector are grouped in this tool (the Climate-friendly hotel cuisine initiative) described in the previous result. Being a tool created by an academy for professionals in the sector, it is aimed in particular at food waste prevention practices, methodologies and techniques to be addressed in VET hospitality.

#### **Adaptation (4/5)**

The emphasis placed by the Austrian government on the general topic of the waste management, and in particular of the Food waste reduction and sustainability, is without doubt the ideal environment where to introduce the Result 2 of VLF project. This Manual will give a deeper perspective into the topic of food waste management by also promoting the 0 km approach and involving external stakeholders.

An ideal objective would be to make the VLF manual gaining national relevance, with some of its contents updating the Federal Waste Management plan, perhaps in a dedicated section.

### **Bulgaria**

#### **Relevance (3/5)**

In the Bulgarian national context, there is not such a specific instrument as a tool for food professionals to adapt traditional recipes following a zero-waste approach. However, looking at the broader picture, Bulgaria seems to be committed to attaining the Sustainable Development Target 12.3 of halve per capita food waste at the retail and consumer level by 2030, and reduce food losses along the food production and supply chains.

In order to attain the mentioned SDG Target, Bulgaria adopted the [National Plan on Waste Management \(2021-2028\)](#), which sets clear goals on waste management and reduction.

Moreover, the [National Programme for Prevention and Reduction of Food Loss \(2021-2026\)](#) also sets an intermediary target to reduce food waste by 25% by 2026, but it never refers specifically to food waste, or implements measures to tackle this type of waste individually (EU Food Loss and Waste Prevention Hub, 2023).

Apparently, one of the major issues within the Bulgarian national context is, according to several studies, not only the question of food waste as a concept and matter of social, political and educative concern, but also that the extent of the problem of food waste in the hospitality sector and, more specifically, in Bulgarian restaurants, is understudied (Bulgarian Ministry of Environment and Water, 2020).

From a general perspective, Bulgaria is starting to take steps towards a zero-waste approach. The problem here relies on the generalist approach of the country. Bulgaria intends to tackle waste as a single concept; therefore, there is not a specific approach on food waste prevention and there are no specific food-waste prevention oriented measures and tools to be implemented at national level (Filomonau et al., 2019).

#### **Adaptation (4/5)**

On one hand, the VET LOVES FOOD Hands-on Manual would be a great instrument to be implemented in the Bulgarian context, providing the country with a clear focus and a set of actions to tackle food waste from a deep approach on the topic.

On the other hand, it is highly relevant to remark that Bulgaria does not consider food waste as a specific problem to tackle. Therefore, the systematic lack of studies on food waste, both at national/consumer level and in the hospitality sector make it significantly more difficult to implement the VET LOVES FOOD Hands-on Manual in the Bulgarian national context, since it is extremely difficult to implement effective measures to tackle food waste without a) knowing the extent of the problem; and b) understanding which are the main issues to be tackled.

According to the previous information, although it is true that the adaptation of the Hands-on Manual to the Bulgarian context is quite complex, in order to work in the Bulgarian educative system, this document should be approached more as a raising awareness tool than as a practical manual for food waste prevention. As stated before, the extent of the problem of food waste is still to be assessed. Hence, at this first stage of evaluation of the problem, one could say it would be easy for the country to have a document of reference

on how to start understanding the problem of food waste and how to start assessing and tackling it.

It would be highly important trying to reach also stakeholders of HORECA and the educational sector in Bulgaria. The reason to target stakeholders is no other than the following: food waste prevention is an undeveloped question in the Bulgarian context. Therefore, it is really important to raise awareness on the importance of this problem among those active actors in both the educational and HORECA sectors. Aligned with this, the Manual should act, as well, as a tool to foster dialogue between those actors, since their communication is needed to promote new education politics oriented to educate better in matters on food waste prevention.

## Croatia

### Relevance (3/5)

Measures to prevent food waste:

Croatia has, together with other EU Member States, committed to achieving the goal set out in the EU and UN 2030 Agenda for Sustainable Development with the relevant Sustainable Development Goals, specifically Target 12.3 Ensure sustainable consumption and production patterns, with the specific aim to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains. For this reason, the Government of the Republic of Croatia adopted a food waste prevention and reduction plan (2019 – 2022) in 2019, together with an accompanying program for its implementation (Government of the Republic of Croatia, 2022).

The Food waste prevention and reduction plan defines prevention as the most desirable option, and in the case of surplus food, the first option would be to redistribute it to people in need and to animal feed, respectively. Encouraging food donation is one of the most important measures in the national food waste prevention plan. Based on the EU Food Donation Guidelines, Croatia developed similar guidelines at national level in 2019.

The legal framework for food donation has been improved to reduce administrative burdens for food business operators, to allow the donation of food products until the end of their ‘use by’ date and after the expiry of their ‘best before’ date if still safe for human consumption. Workshops with food business operators were organized in order to clarify

the legal food safety requirements in relation to food donation and to encourage them to join the food donation system. Since 2015, there have been tax incentives for food donations: VAT is not imposed on donations of foods close to their expiration date, nor for foods that could not be placed on the market (for other reasons than food safety considerations). Also, if made under certain conditions, donations from profit tax payers are tax deductible and income taxpayers can also benefit from a tax deduction on food donations. Furthermore, the Ministry of Agriculture launched an IT system to facilitate food redistribution, which improves the communication between donors and charities

In line with the food waste reduction and prevention plan, the Ministry of Agriculture has published sectoral guidelines for the retail sector and for hospitality and institutional kitchens. The publication of guidelines for the primary production and food processing sectors is planned to take place by the end of 2021.

Additionally, the Ministry of Economic and Sustainable Development has developed and maintains the Waste Prevention Portal, which contains general information related to waste prevention and prescribed waste prevention measures. It provides basic information on ways to prevent bio-waste and to reduce food waste as well as examples of food waste prevention activities conducted by local self-governing entities and companies. A new webpage dedicated to food waste prevention is being planned for 2022. The project is led by the Ministry of Agriculture, in the framework of the national recovery and resilience plan of the Republic of Croatia.<sup>4</sup> These measures are to be implemented between 2019 and 2022. The total investment for all measures amounts to HRK 8.020.500,00 (~1.242.313,26 USD) (European Environment Agency -EEA, 2023).

Moreover, a Food Bank Feasibility Study was conducted. Several activities and informative materials have been organised and developed in order to raise consumers' awareness of the issue of food waste: a video explaining the difference between date markings, a brochure 'Understanding food information and consumer attitudes about food waste', a short animated film to encourage consumers to use surplus food, a consumer campaign (2020) under the slogan 'Eat and share! #Food is not waste!' etc. Tips for reducing food waste are usually published before the holidays on the website of the Ministry of Agriculture (One Planet, 2024).

The plan for prevention and reduction of food waste generation (2019/2022) contains 6 main measures and related activities that apply to the entire food value chain, which were

designed in cooperation with relevant actors (Government of the Republic of Croatia, 2022):

- Improving the food donation system in the Republic of Croatia;
- Encouraging the reduction of food waste generation;
- Promoting social responsibility of the food sector;
- Raising awareness and informing consumers on prevention and reduction of food waste generation;
- Determining the quantity of food waste;
- Investing in research and innovative solutions that contribute to the prevention; and reduction of food waste generation.

The planned activities, some of which have already been implemented, include:

- drafting of sectoral guidelines for food waste reduction;
- the promotion of short supply chains;
- the launch of a Platform to share experiences and best practices;
- the establishment of voluntary agreements with stakeholders to reduce food waste;
- the definition of criteria for the most successful food waste fighters and the organisation of an award ceremony;

### **Adaptation (4/5)**

The research revealed a very pronounced focus by the Croatian government on the topic of waste management, sustainability and food waste prevention.

The prevention plan and the related measures investigate the topic in detail and the planned measures are very detailed and punctual, but are often directed at political actors or stakeholders.

On the other hand, the manual prepared by the VET LOVES FOOD project has a much more practical approach and is directed primarily at professionals in the HORECA sector, to enable them to put into practice concrete actions aimed at managing and reducing food waste in the kitchen and in restaurant management.

In this context, the integration of government regulation with a practical implementation manual could be the ideal solution to set the objectives of a national policy and provide the concrete tools for its implementation.

## Cyprus

### Relevance (3/5)

In the absence of manuals developed by privates, research turns towards national food waste management legislation, to highlight the main characteristics of the Cyprus system.

The Government of Cyprus has shown commendable dedication in promoting sustainable practices through the continuous development and improvement of specific legislation geared towards the prevention of food waste and the establishment of a more environmentally friendly food waste management system. This commitment is particularly evident in the Waste Management Strategy, which operates at both municipal and national levels under the purview of the Department of the Environment.

Within the overall waste management strategy, the prioritisation of food and organic waste stands out as a key area of focus. The Department of the Environment has strategically identified the reduction and efficient management of food waste as crucial components in its wider efforts to improve environmental sustainability. Recognizing the profound impact of food waste on both ecological and economic aspects, the government has allocated resources and implemented targeted measures to address this problem.

Furthermore, the waste management strategy has been designed to include specific provisions and measures dedicated to priority sectors, among which the food system occupies a prominent place. This approach ensures that the unique challenges and opportunities of the food industry are addressed comprehensively, recognizing its significant role in the overall waste management landscape.

The program's commitment to prioritising the food system within its strategic framework highlights a nuanced understanding of the interconnectedness of various sectors in the pursuit of sustainable waste management practices. By integrating targeted initiatives and regulations, the Government of Cyprus aims not only to reduce food waste, but also to foster a paradigm shift towards a more circular and sustainable approach to resource management within the food supply chain (Dikigoropoulou, 2021).

Specific waste prevention measures structured according to Art 9 WFD (prevention measures food waste).

Reduce the generation of food waste in primary production, in processing and manufacturing, in retail and other distribution of food, in restaurants and food services as



well as in households as a contribution to the United Nations Sustainable Development Goal to reduce by 50 % per capita global food waste at the retail and consumer levels and to reduce food losses along production and supply chains by 2030.

Encourage food donation and other redistribution for human consumption, prioritising human use over animal feed and the reprocessing into non-food products.

Municipal Waste Management Strategy 2021 – 2027 Department of Environment

The Municipal Waste Management Strategy provided the policy framework for the implementation of some key measures aimed at decentralising waste management in Cyprus.

The Waste Law was amended assigning responsibility to local authorities for the management of municipal waste and regulations have been prepared which: require the adoption of local waste management plans and waste prevention programmes, the establishment of separate collection systems for the different municipal waste streams, including organic waste and the adoption of pay-as-you-throw (PAYT) schemes.

In the framework of manuals promoting waste management, there are several financed initiatives dealing with the topic, like the Project Zero Waste Cyprus – Intelligent monitoring and efficient waste reduction in Cyprus Island, who was developed under the sponsorship of the Republic of Cyprus (European Environment Agency - EEA, 2023).

#### **Adaptation (4/5)**

The legislation in Cyprus is constantly updated and rich in measures and laws aiming at promoting a more sustainable waste management.

The introduction of the VLF Manual in the VET ~~System~~<sup>SYSTEM</sup>, but also in the ordinary working life of HORECA industries in Cyprus, could help professionals having a clearer focus on the food waste management topic.

A potential solution would be the introduction of the manual as an “additional learning tool” in the different training opportunities or initiatives related to HORECA sector, asking trainers to share the initiative throughout the companies involved in the traineeship of students.

VLF manual, indeed, embeds a strong educational intent, as it proposes both informative content (Food in education, Waste as a resource), but also very practical training topics

on the management of sustainable restaurants, or on the preparation of traditional yet sustainable dishes.

This bottom-up approach will reinforce the formal legislation on waste management by raising attention and awareness on specific techniques to be adopted in the hospitality sector.

## Czech Republic

### Relevance (3/5)

While the found projects do not explicitly mention the elaboration of a manual, initiatives like "Vaříme zdravě, neplýtváme potravinami" and "Projekt „Ovoce do škol“" promote materials for the use of local products and healthy eating habits, which can contribute to reducing food waste and valorizing traditional recipes (Ministertvo Zivotniho Prostredi, 2023; VUPP, 2023).

Initiatives like "Vaříme zdravě, neplýtváme potravinami" can indirectly support food professionals in adapting traditional recipes with a zero-waste approach; "Projekt „Ovoce do škol“" promote local food consumption, which aligns with the principles of a 0 km approach. Additionally, projects that focus on food waste prevention, such as "EnviEdu" and "Udržitelné zemědělství v odborném vzdělávání," contribute to fostering a culture of food waste prevention and management (Agricultural Association of the Czech Republic, 2023; Czech Chamber of Commerce, 2023).

### Adaptation (4/5)

The collaborative nature of projects like the "National Network for Support of VET in Agriculture and Food Industry" and "Projekt „Udržitelné zemědělství v odborném vzdělávání“ Workshops" promotes stakeholder engagement in addressing the challenges of attaining Sustainable Development Goals (SDGs) related to food waste prevention, management, and sustainability. These initiatives facilitate knowledge exchange and collaboration between various stakeholders, raising awareness and promoting action towards these goals.

## Denmark

### Relevance (5/5)

In terms of food waste prevention, Denmark has experienced a boost in the number of initiatives to tackle the problem of food waste, all of them encompassed in the frame of

the [Danish National Waste Prevention Strategy](#). Among the most relevant initiatives taken by the country to prevent and tackle food waste are The “[Green Development and Demonstration Program](#)” and “[Eco-Innovation Program](#)” support innovative green solutions by businesses and research institutions to prevent food waste – for example by developing packaging solutions to prolong freshness of fruit and vegetables. Besides, it is important to present the “[Stop Wasting Food Movement \(Stop Spild Af Mad\)](#)”, Denmark largest movement against food waste (Champions 12.3, 2017).

Moreover, in 2019, the Danish Government established the [Think Tank on Prevention of Food Loss and Food Waste – ONE\THIRD](#) and launched the Denmark against Food Waste voluntary agreement, where food business operators along the food value chain can commit to monitor and report their amounts of food waste thereby contributing to achieving the target of reducing food waste by 50 % by 2030 (PACE - Platform for Accelerating the Circular Economy, 2023).

As it can be seen, Denmark has been acting holistically to prevent and tackle the problem of food waste. In fact, it has been addressed in international diaries as the “leader of the food waste revolution” (Russel, 2016), and, according to afore-mentioned information, in some way, one could say that it is true. Nevertheless, it is important to remark that Denmark’s efforts against food waste have been mainly focused on avoiding waste at the first steps of the supply chain. Among all the documents presented in the present study, the HORECA sector is hardly mentioned, even if it is one of the most relevant actors in food waste prevention (EU Food Loss and Waste Prevention Hub, 2023). From this perspective, one could say that, although the Danish strategy towards food waste is, essentially, remarkable. However, it is worth mentioning that it is somehow “limping”, since preventing food waste in the HORECA sector is key to tackle the problem at the latest stages of the supply chain.

### **Adaptation (5/5)**

According to the information previously gathered, it is worth mentioning that the VET LOVES FOOD Hands-on Manual against Food Waste can be an essential tool to provide a more holistic and accurate vision to the already greatly developed Danish strategy against food waste. The manual can be a reference for Denmark to understand the importance of tackling food waste in kitchens, but more important, also to understand the

importance of revalorizing traditional recipes, repurposing food, and understanding the importance of choosing seasonal and local products.

Seemingly, a tradition of food imports and exports could have blurred the Danish perspective on the relevance of tradition and use of local products as the base of a low-waste cuisine. In essence, although one of the strengths of Denmark is alignment of all the relevant stakeholders related with food in the need of tackling and preventing food waste, one of the probable weaknesses is the focus on the agro-food sector, leaving the HORECA sector and the education degrees in the sector behind.

Therefore, to conclude, The VET LOVES FOOD Hands-on Manual can be used by Denmark as a linking piece that, one could say, if well used and adapting the content to the needs of the country, which embraces all the previous Danish means against food waste providing a 360 approach to the problem.

## Estonia

### Relevance (3/5)

As it is the case of many countries, Estonia has developed several waste management plans during the last decades, following the green transition trend that Europe, as a whole, has been experiencing. In this regard, one observable question, that is common to many of the countries analysed, is that food waste is has been not addressed by the governmental institutions from a solo perspective for several decades It has been usually encompassed in a huge National Report addressing the waste from a general perspective, focused on a “one size fits all” approach, as it can be seen in the Estonia Waste Country Profile of 2023, drafted by the European Environmental Agency (European Environmental Agency - EEA, 2023).

From a certain perspective, one could say that the Estonian governmental efforts have been focused towards energy saving and climate action, as it is observable in the Tallinn Sustainable Energy and Climate Action Plan 2030. The plan foresees political, economic, technological, educational and administrative activities in order to: reduce the climate impact of urban living and management; adapt to climate change, as it will not be possible to stop climate change any time soon; and do all this in a diversifying, innovative and economically smart manner for the economy and the urban environment (Climate-neutral Tallinn, 2021).

It is true, despite what was said above, that Estonia, since 2022, is working towards giving better focus on food waste prevention as a separate issue, by preparing a [national food waste prevention plan](#) that includes different measures involving all key players across the food supply chain. There are six areas of action (with 29 activities) in the food waste prevention plan, covering data collection and measurement of food waste; legislative framework and regulatory objectives; effective cooperation between different stakeholders and national authorities; innovation and R&D; food redistribution and consistent awareness raising, communication and training (EU Food Losses and Food Waste Prevention Hub, 2023).

However, this new food waste prevention plan only covers the administrative-political scope of the food waste prevention framework, which, in result, is still inefficient to tackle food waste from a 360° perspective. Although some measures have been taken to tackle the food waste problem in the country, it is true that the education field, especially those degrees related with the HORECA sector, are lacking a tool or certain measures to provide the chefs of today and tomorrow with the skills to develop a sustainable cuisine.

#### **Adaptation (4/5)**

According to the previous information, the Hands-on Manual is a resource totally adaptable to the Estonian case, since it covers a gap encountered in the education field that not only does not collide with the Estonian National Food Waste Prevention Plan, but also provides an open resource for VET trainers, students, and stakeholders of the HORECA sector to integrate new best practices on how to prevent food waste in kitchens.

### **Finland**

#### **Relevance (4/5)**

The research brought up several initiatives and resources aimed at preventing food waste and promoting sustainable practices in Finland, particularly within the hospitality and education sectors. Notable projects such as Green Chefs Finland, the Sustainable Restaurant Guide by Sitra, and the Circular Economy in Restaurants training demonstrate a concerted effort to provide tools and guidance for professionals in the food industry to reduce waste and embrace sustainability. Additionally, educational resources like the Gastronomy & Climate Change course and the School Meals Guide underscore Finland's commitment to integrating sustainable practices into culinary education and school meal programs. These initiatives collectively contribute to fostering a culture of food waste

prevention and sustainable food production in Finland (Suomen Gastronomien Seura ry, 2023; WWF Finland, 2023).

Projects like Green Chefs Finland and the Circular Economy in Restaurants training offer practical guidance for chefs and food professionals to minimise waste and adopt sustainable practices in their operations. For instance, Green Chefs Finland provides educational materials on reducing food waste, while the Circular Economy in Restaurants training equips chefs with the knowledge and skills to implement circular economy principles in their kitchens. Similarly, the Sustainable Restaurant Guide by Sitra offers concrete steps for restaurants to enhance sustainability, including strategies for minimising food waste and sourcing local ingredients (Kouluruoka.fi, 2023; Opintopolku, 2015).

#### **Adaptation (4/5)**

The tools and approaches developed within these Finnish initiatives hold significant potential for replication and adaptation in other European contexts. For instance, the Sustainable Restaurant Guide by Sitra could serve as a model for other countries to develop their own comprehensive guides for promoting sustainable practices in the restaurant industry. Likewise, the Circular Economy in Restaurants training program could be adapted for use in hospitality training programs across Europe, helping to embed principles of sustainability and waste reduction into culinary education. Additionally, educational resources such as the Gastronomy & Climate Change course could be translated and adapted to cater to the needs of VET hospitality programs in other European countries, facilitating the integration of sustainable practices into culinary curricula. Overall, the experiences and resources developed in Finland provide valuable insights and tools for addressing food waste and promoting sustainability in the European food sector.

### **France**

#### **Relevance (2/5)**

France has been a trailblazer at the European level since 2004, when it introduced its inaugural national waste prevention plan. This commitment to waste reduction has been consistently upheld through various initiatives:

The National Pact to Combat Food Waste, initiated in 2013, represents a collective dedication to "take tangible action against the excesses of the society of overconsumption" and to "restore purchasing power." Outlined in its 2017-2020 plan, the Pact incorporates 16 measures derived from extensive consultations with stakeholders across the food chain. The pact ambitiously aims to cut waste in half by 2025 and is directed at all participants in the food chain.

In 2014, a public awareness initiative named "Inglorious Fruits and Vegetables" was launched in France, employing humour to promote the purchase of imperfect produce, emphasising its nutritional equivalence to their more visually appealing counterparts. Remarkably, within the initial two days of implementing this campaign, a solitary French supermarket successfully sold 1.2 tons of disfigured products.

The law established in 2016, addressing the fight against food waste establishes a legal framework against waste. This legislation, delineates a hierarchy of actions to be implemented by each participant in the food chain, including waste prevention, raising awareness of waste impacts, utilising unsold food for human or animal consumption, and composting for agricultural or energy recovery. It also prohibits supermarkets from discarding consumable food.

The anti-waste law for a circular economy, ratified in February 2020, aims to bolster existing measures to combat food waste. This law sets the target of reducing food waste by 50% from its 2015 level in food distribution and collective catering by 2025, and by 50% from its 2015 level in consumption, production, processing, and commercial catering by 2030. The law also envisages the elimination of all single-use plastic packaging by 2040, with tangible effects observed, such as the prohibition of cups, plates, and cotton buds from January 1, 2020.

The National Waste Prevention Program for 2014-2020 places on the agenda specific objectives to curtail the production of household waste and stabilise waste from economic activities and construction through the implementation of 54 concrete actions.

The French Ministry of Ecology, Energy, and Sustainable Development initially required the private sector to recycle organic waste if their annual production exceeded 120 tons. However, this threshold has been progressively reduced, encompassing not only supermarkets and agrifood companies but also extending to businesses in the hospitality and food service sector. Non-compliance with this legislation could lead to fines of up to



€75,000. As of now, recycling has become obligatory for all businesses, including those in the hospitality and food service industry, generating a minimum of 10 tons of organic waste annually. This translates to approximately 33 kilograms per day, a significant requirement that, for instance, for a restaurant serving 150 meals daily, constitutes about 50% of all the waste generated from their dining establishments.

In 2018, a collaborative food waste focus group was established. The business district initiated a program dedicated to reducing food waste, and five companies within the district enthusiastically embraced the challenge, committing to curbing food waste. Under the program, an evaluation of food waste across all five companies was conducted, followed by a trial period to assess the effectiveness of waste reduction measures. The findings from this evaluation, coupled with the insights gained from the project, culminated in the development of a practical guide. This guide serves as a valuable resource for other businesses, offering guidance on modifying their production processes to effectively minimise food waste.

However, to the best of our knowledge, within the national context of France, there is currently no dedicated tool available for food professionals to adapt traditional recipes in alignment with a zero-waste approach.

Examples of this are:

- National Pact to Combat Food Waste;
- Inglorious Fruits and Vegetables;
- Law established in 2016;
- anti-waste law for a circular economy;
- National Waste Prevention Program for 2014-2020;
- Guide How will AI transform the hospitality industry?

### **Adaptation (5/5)**

In light of the continuous efforts undertaken by the French government to tackle the issue of food waste, the VET LOVES FOOD manual emerges as a beacon of inspiration. This comprehensive guide possesses the capacity to inspire and motivate professionals within the culinary sphere, urging them to rethink and adapt traditional recipes through the lens of a zero-waste approach. The manual goes beyond mere recipe modification; it actively

promotes the adoption of a 0 km approach, advocating for the use of locally sourced ingredients to minimise environmental impact.

Furthermore, the manual plays a pivotal role in cultivating a culture of food waste prevention and management among professionals. By offering insights, strategies, and practical tips, it equips individuals in the culinary sector with the knowledge and tools necessary to integrate sustainable practices into their daily operations.

One of the standout features of the VET LOVES FOOD manual is its function as a valuable educational resource for vocational education and training. It serves as a practical and informative tool for instructors and learners alike, providing a structured framework for introducing methodologies and techniques specifically tailored to prevent food waste in hospitality settings. This not only enhances the skill set of individuals pursuing careers in the food industry but also contributes to the broader goal of creating a more sustainable and conscientious culinary sector. Overall, the manual represents a significant asset in aligning professional practices with the imperative of reducing food waste in the realm of hospitality.

## Germany

### Relevance (3/5)

In Germany, HORECA professionals use various strategies and tools to adapt traditional recipes following a zero-waste approach:

Zero Waste Certification:

This certification ensures the control of pesticide residues in food.

HORECA professionals can use products with this certification in their recipes to minimise waste.

Flowcharts for recipes:

Flowcharts are graphical representations of processes that can help HORECA professionals adapt their traditional recipes and minimise waste.

Agriculture Residue 0:

This production system provides the farmer with more tools to combat diseases and pests in a cost-effective way, controlling as much as possible agrochemical residues derived from agricultural management.

HORECA professionals can use Residue 0 agricultural products in their recipes to minimise waste.

In Germany, the promotion of the culture approach to food waste prevention and management involves the implementation of various tools and strategies. Here are some specific tools that have been used or promoted in the country:

Too good for garbage.

This is a campaign supported by the Federal Ministry of Food and Agriculture in Germany. It seeks to raise awareness about food waste and offers practical advice to reduce it. In addition, the campaign encourages collaboration between companies, organisations and citizens.

Too good to go

This app connects consumers with restaurants, grocery stores, and other local businesses to buy surplus food at discounted prices before it's discarded. The app has gained popularity in several European countries, including Germany.

Research & Development Projects:

Germany has supported research and technological development projects that seek to improve food supply chain management and reduce losses. These projects often explore innovative technological solutions to address food waste.

Government Policies:

Germany has implemented policies that encourage the reduction of food waste, including grant programs for companies that adopt sustainable measures and legislation that facilitates food donation.

Specialised Events and Fairs:

Participation in trade fairs and events specialising in sustainable food and responsible agricultural practices provides a platform for the dissemination of information and the exchange of good practices.

### Collaboration with Companies and Supermarkets:

Many companies and supermarkets in Germany have adopted internal initiatives to reduce food waste. This can include streamlining inventory management processes, donating unsold food, and clear labelling to inform consumers.

### Consumer Initiatives:

Encouraging initiatives among consumers, such as purchasing planning, proper food storage, and using creative recipes to take advantage of available ingredients, contributes to a culture of food waste prevention.

### Participation of NGOs and Non-Profit Organisations:

Non-governmental and nonprofit organisations play a key role in promoting sustainable practices and combating food waste. Collaboration with these organisations can amplify efforts to address the problem.

These tools represent a combination of approaches that address food waste from various perspectives, including awareness, technology, regulation, and collaboration between different actors. The effectiveness of these tools depends on the active participation of society, businesses, and government institutions.

These examples represent different approaches to tackling food waste in Germany, involving the community, businesses and organisations in joint efforts

### Too good to go:

Description: The "Too Good To Go" app connects consumers with restaurants, bakeries, and grocery stores to buy surplus food at discounted prices before it's discarded.

How to Participate: Establishments registered on the app offer "surprise boxes" with food that would otherwise be wasted, allowing users to purchase it at a reduced cost.

### Too good for the bin (Demasiado Bueno para la Basura):

Description: The "Zu gut für die Tonne" campaign supported by the German government promotes the prevention of food waste. It offers educational resources, practical tips, and awareness campaigns.

How to Get Involved: Citizens can access information on how to reduce food waste at home and participate in local initiatives.

#### Club ResQ:

Description: Similar to Too Good To Go, ResQ Club is an app that connects users with local restaurants and stores to acquire surplus food at discounted prices before it is discarded.

How to Participate: Establishments post surplus food offers in the app, and users can purchase and pick up the products.

#### German Food Bank (Tafel):

Description: The German Federation of Food Banks (Tafel) collects unsold but safe food and distributes it to local charities.

How to get involved: Food companies and supermarkets can donate unsold food, and volunteers help distribute it to those in need.

#### Sustainability Seals:

Description: Sustainable certifications and seals that highlight companies committed to responsible practices, including food waste management

How to Participate: Companies that adopt sustainable measures and reduce their waste can earn these seals, gaining recognition for their efforts.

These examples represent different approaches to tackling food waste in Germany, involving the community, businesses and organisations in joint efforts (TAFEL, 2023).

#### **Adaptation (4/5)**

We have not found manuals with the characteristics of the practical manual of VET LOVES FOOD, however there are lines of work that are in line with the approach of the manual, which is why the adaptation of this manual to the German context would be appropriated.

The content of this manual can complement and consolidate actions promoted in Germany within the field of education and the food sector within a scenario of greater sustainability and lower impact through the reduction of food waste.

#### **Greece**

#### **Relevance (3/5)**

The trend towards sustainable practices in the HORECA sector is on the rise in Greece in line with its environment. In addition, growing consumer awareness of sustainability is influencing the decisions of industry professionals to adopt more responsible approaches to food management.

Adapting traditional recipes to more sustainable options usually involves considering local and seasonal ingredients, reducing food waste, opting for sustainably sourced products and using environmentally friendly cooking practices, in the case of Greece there are emerging unformalized experiences in this regard.

The trends are summarised as increasing public awareness of sustainability, product traceability, low environmental impact food solutions, food safety and changing consumer behaviour towards greater use of the digital channel (Nagref, 2023).

#### **Adaptation (4/5)**

The inclusion of a manual with the characteristics developed in the project can be very useful in the Greek context as similar tools are not found.

The Greek gastronomic context is important and the adoption of this type of tool, together with the growing awareness in the field of sustainability, can contribute to the powerful development of new gastronomic models by merging tradition and sustainability.

### **Hungary**

#### **Relevance (3/5)**

The projects identified provide valuable resources and initiatives aimed at tackling food waste and promoting sustainability within the Hungarian food sector. While there isn't a direct match for a manual focused on preventing food waste and valorizing traditional recipes and local products, these projects offer various tools and strategies that contribute to these goals. They encompass educational materials, stakeholder engagement, and practical approaches to reducing food waste, promoting local products, and fostering sustainable practices. Additionally, these projects play a significant role in raising awareness and activating stakeholders towards achieving Sustainable Development Goals (SDGs), particularly in the context of food waste prevention and management (EU Food Loss and Waste Prevention Hub, 2023).

One notable project is the Élelmiszermentési Nemzeti Akcióterv (National Food Waste Prevention Action Plan), which provides guidelines for food businesses on food waste

prevention and offers educational materials tailored for VET institutions in the hospitality sector. Similarly, Élelmiszermentés.hu - Élelmiszermentő Közösség (Food Rescue Hungary - Food Rescue Community) conducts workshops and develops educational materials aimed at food businesses and VET students to raise awareness about food waste prevention strategies. Additionally, the Fenntartható Élelmiszerrendszerek Magyarországon (Sustainable Food Systems in Hungary) research project by the Hungarian Academy of Sciences contributes valuable insights into food sustainability, including food waste reduction (Élelmiszermentés, 2023).

#### **Adaptation (4/5)**

These projects offer a wealth of resources and knowledge that can complement and enhance the goals of the VET LOVES FOOD project. By collaborating with initiatives like the National Food Waste Prevention Action Plan and Food Rescue Hungary, VET LOVES FOOD can integrate additional tools and methodologies for promoting green skills and raising awareness about food waste prevention within the agro-food curricula of VET educational pathways. These projects provide a solid foundation and practical examples that can be adapted and implemented by VET teachers, trainers, students, and schools to instil sustainable practices and foster a culture of food waste prevention within the hospitality sector.

### **Ireland**

#### **Relevance (5/5)**

VET and FET training in Ireland is under the Authority of SOLAS, responsible for overseeing the development and implementation of related policies, and providing a centralised platform for communication and collaboration among VET providers. Education and Training Boards Ireland (ETBI) serves as a national organisation that fosters collaboration, shares best practices and provides support to VET providers, while the local ETBs are responsible for the provision and coordination of education and training at a regional level. Although the ETBs operate within their specific geographical area, they often collaborate on broader initiatives, policies, and projects that benefit multiple regions, while maintaining autonomy in decision-making related to local priorities and needs (Environmental Protection Agency - EPA, 2023).

In 2018, and subsequently updated in 2023, Ireland's Department of Education and Department of Further and Higher Education, Research, Innovation and Science, along



with the Department of Children, Equality, Disability, Integration and Youth, developed the National Strategy on Education for Sustainable Development in Ireland (ESD to 2030). This strategic framework traces a course for the education sector toward a more sustainable future (WRAP, 2023).

Within the ESD to 2030, Priority Action Area 1, titled "Advancing Policy," holds collaboration as a pivotal component. The emphasis is on strengthening international, inter departmental, and multi-stakeholder coordination to facilitate information exchange, enhance accountability, and encourage engagement in ESD (Bord-Bia Irish Food Board, 2023).

Priority Action Area 3 concentrates on "Building Capacity of Educators." This involves the development of ESD capacity among educators across formal and non-formal education levels. The strategy underscores the value of peer learning, promoting opportunities for it, and facilitating the sharing of good practices.

Lastly, Priority Action Area 5, "Accelerating Local Level Actions," underscores both Community linking and collaboration and Local authority engagement. The former seeks to nurture collaboration between education providers and local communities, social organisations, and local authorities. The latter aims to drive the development of action plans by local authorities, fostering coordination with enterprises and other stakeholders committed to sustainable development (Fáilte Ireland, 2022).

Some examples of initiatives that promote collaboration between VET providers and the industry aiming to align education and training programs with the evolving needs of industries that prioritise environmental sustainability are:

- [Skills to Advance](#): supported by the Irish government, encourages collaboration between VET providers and industry stakeholders. This initiative focuses on upskilling employees and addresses the evolving skill needs of the workforce, including those related to sustainability and green skills;
- [Green Skills Action Plan](#): designed to address the skills needs arising from the transition to a green economy, involves collaboration between education and training providers, employers, and other stakeholders to develop and deliver training programs that emphasise green skills.

Besides government-led initiatives, there are others developed by schools or by actual companies, and some of the most relevant are:

- [AIB Future Sparks](#): with over 630 schools registered, this programme is designed to support young people in Ireland by providing educational resources, experiences, and opportunities to enhance their skills and knowledge. The program aims to empower and inspire the next generation, helping them to navigate the challenges of the future while offering support to teachers and parents, all this through the use of an online platform.
- [Climate Smart](#): an initiative aimed to raise awareness about climate change adaptation promoted by the Climate Smart team, led by Prof. Anna Davies from Trinity College Dublin and An Taisce's Environmental Education Unit.

From this research is possible to understand that Ireland is focused on promoting sustainable education within the VET sector, however, even though some initiatives promote the proximity with sustainability and green skills, it seems to be very generalized, without going deeper on any topic, including food waste prevention and management, which also happens with the non-government-led initiatives.

Nevertheless, the interest in sustainability topics exists, and the government is leading the way towards achieving a more sustainable future through education.

#### **Adaptation (4/5)**

Ireland's initiatives toward sustainability and ecological responsibility, particularly in the context of waste reduction and food waste management, reflect a multi-faceted approach that involves both governmental institutions and private sector entities.

Ireland's Environmental Protection Agency has demonstrated a strategic effort to reduce waste generation and promote sustainable consumption and production practices.

The acknowledgement of Ireland's food waste statistics, as per the EPA and EUROSTAT, highlights a significant challenge, with households and the F&B industry contributing to a substantial portion of the waste.

In Ireland, there's not only a concern about food waste prevention but also about the promotion of local cuisine, shown by initiatives such as Fáilte Ireland, and on what the private sector is concerned, the Courtauld Commitment.

There are also a variety of non-governmental initiatives that emphasise the role of communities and businesses in preserving culinary heritage and promoting sustainability in the food service sector, and the adherence to certification awards aligned with international standards and Sustainable Development Goals further underlines Ireland's commitment to environmentally responsible practices.

There is a clear collaborative effort in Ireland to reduce food waste and value local production and consumption, involving many stakeholders throughout the food supply chain, and the range of activities pursued demonstrates a versatile approach towards a more sustainable and conscious future.

This being said, there are already a great number of activities being developed, some of the same nature as the VLF manual, however, the Irish commitment to reduce food waste by 50% by 2030 asks for a great number of initiatives and tools so that it can be achieved. Therefore, there is still room for the introduction of the VLF Manual in the country, in particular, if also adapted to be used within households.

## Latvia

### Relevance (5/5)

Latvia, like other European countries, adhered to the SDGs agenda from the UN. To what concerns SDG 12, Latvia has been progressively developing a “new climate-neutral economy in which natural resources are used sparingly and rationally”. In 2022, unsorted household waste made up about a third of the nation’s yearly food waste, and the government is committed to reducing it by half by 2030, achieving 30% by 2025 already. When it comes to municipal waste, the Central Statistical Bureau of Latvia states that household food and other biodegradable waste constitute 41% of the generated waste. This effort is planned to be made by transitioning from waste management to resource management, including the introduction of a bio-waste system by 2023, and the increase in the amount of household waste prepared and recycled for reuse to at least 55% by weight by 2025, among other actions (Ministru kabinets, 2020).

The reduction of food waste had already been developed in 2019, with the implementation of a national methodology for measuring food losses and it included provisions for food business operators and households. In this line, handbooks for food waste management were developed for enterprises and households too (EU Food Loss and Waste Prevention Hub, 2023).

Latvia also implemented a Food Waste Prevention programme (2021-2028), developed per the National Waste Management Plan (2021-2028). Some of the measures that the FWP programme comprises are (Government of Latvia, 2017):

- Improvement of the donation system;
- Food waste prevention;
- Awareness-raising and information campaigns about food waste through dialogue and agreements with producers, processors and traders, etc.;
- Food waste levels monitoring and measurement;
- Research and innovation support aimed at the reduction of food waste.

The Strategy for the Achievement of Climate Neutrality by 2050 gives inputs for action on sustainable consumption and production, applying the “no waste, only raw materials” principle, to encourage an effective use of resources and guarantee their continuity in the circular economy. In this regard, “food business operators are encouraged to cooperate in their use of resources through industrial symbiosis solutions, as well as industrial clusters”. This will be accomplished also through the National Energy and Climate Plan (2021-2030), which brings many measures to improve the management and reduction of food waste, such as actions to change consumer behaviour, development of educational materials, etc.

The redistribution of food past the “due date” was also facilitated by the adoption of additional rules through Cabinet Regulation No 514 of 11 August 2020.

Latvia organised several food waste awareness-raising initiatives carried out by the Ministry of Environmental Protection and Regional Development, like the “Discarded is not gone” campaign, which intended to inform and educate families about waste generation through a website, the use of a trash diary, and the sharing of recipe videos using leftovers.

Many educational and informative measures are implemented by the EU Schools System Scheme programme, to improve student’s knowledge “about agriculture and food production, seasonal and regional products, the local food chain and the fight against food waste, healthy eating habits and lifestyles”.

#### **Adaptation (4/5)**

Latvia is actively addressing the issue of food waste, by adhering to EU policies and goals and implementing measures to achieve them.

There seem to be many measures focusing on households, and a few focusing on industry professionals, with some more general than others.

However, Latvia shows that it has an open spirit about the adoption of sustainability measures, which seems to be a good starting point to approach people/organisations and introduce the VLF manual, thus its implementation could easily integrate among the already existing tools and resources.

## Lithuania

### Relevance (4/5)

Lithuania views the shift towards a circular and climate-neutral economy as a key strategic objective, aiming to achieve full circularity and climate neutrality in its economy by 2050.

This encompasses a focus on minimising food waste and loss, particularly within households where a significant portion of waste is generated. Factors such as economic stability, increased purchasing power, and the influence of the COVID-19 pandemic have contributed to shifts in population habits, leading to a rise in food waste. To address this, financial instruments have been employed in the retail sector and public education, to reduce household food waste by 10% by 2030.

The National Waste Prevention and Management Plan (2021 – 2027) includes measures such as the allocation of resources for initiatives like food sharing/donation, promotion of short supply chains; implementation of awareness-raising campaigns, and the establishment of a regulatory framework to mandate food donation in line with international best practices. Along the same line, The National Energy and Climate Action Plan (2021 – 2030) includes actions that focus on educating the public about “food waste and how to prevent it, improving waste sorting skills, creating information websites, applications and interactive maps” (Ministry of Environment - Republic of Lithuania, 2023).

A [leaflet](#) for primary producers was created by the Ministry of Agriculture on how to donate surplus products, and the national food bank Maisto Bankas created a [booklet that guides food business operators on how to donate food](#).

As part of the Global Learning Approach to Food Waste in Non-Formal Education project (2017-2020), supported by the European Commission, the Lithuanian Consumer Institute created the campaign "[Sincerely, Food](#)" among various awareness-raising initiatives. The campaign seeks to address the awareness gap surrounding food waste by enhancing understanding of its global connections to climate change. Furthermore, it aims to increase awareness of the interdependencies between developing and developed countries in terms of food production and consumption while promoting skills for avoiding food waste in households.

The Lithuanian Rural Tourism Association is engaged in the implementation of the Interreg program project titled "[Development of Local Food Supply B2B Business Model in the Baltic Sea Region.](#)" This initiative aims to enhance collaboration between food producers in the Horeca sector and local farms, with a focus on promoting local food culture. Facilitating this effort is an e-platform known as "Products of Local Farmers." Through this platform, Lithuanian farmers showcase their diverse production and seasonal offerings, providing a convenient way for restaurants and shops to access the products they need. Emphasising the 0-kilometre principle, the platform features a map highlighting nearby producers. Moreover, it includes details about products available during specific seasons, allowing inquiries to be sent to multiple suppliers simultaneously to secure the best price offers (EU Food Loss and Waste Prevention Hub, 2023).

#### **Adaptation (4/5)**

Lithuania is focused on changing the country's approach towards food, by committing to European goals.

Some policies and resources were developed to encourage the population, but also producers and food businesses providers to waste less food. Another important tool found throughout the research above was the e-platform meant for restaurants to adhere to a 0-kilometre principle. However, not many initiatives directed to the Horeca sector were found.

Since the will exists, among the population and the government, the VLF food manual could be distributed through different channels for the restaurants already involved in waste-reducing initiatives, and for stakeholders it could be adapted in a way they can understand the benefits of its use, promoting further dissemination among their partners.

## Luxembourg

### Relevance (3/5)

After a deep review, it has been found that there are little to no governmental initiatives fostered by the government of Luxembourg. Only a few indicators, such as the Zero Waste hub, apparently powered by the government, provide resources to foster food waste prevention through tools and best practices sharing. Nevertheless, the information available is blurred to some extent. However, some private initiatives have been launched, such as [Foodsharing Luxembourg](#), an environmental association which fights food loss and waste by supporting the quick exchange of food that would be thrown away. Foodsharing Luxembourg wants that by raising awareness of this issue and its impacts on the climate, environment, and society, and by pushing for a systematic change this will dramatically reduce the quantities being wasted (Zero Food Waste, 2024).

Therefore, it can be inferred that fostering food waste prevention through education is not taken into account to be provided by the government of Luxembourg in the short run. The problem here lies on how to implement and power a resource without the support of the government.

### Adaptation (3/5)

Afore, it has been clearly assessed a scenario where food waste is not well-addressed by the governmental institutions of Luxembourg. Nevertheless, the rise of food waste prevention coming from private initiatives gives some hope to tackling the problem. Therefore, although the VET LOVES FOOD Hands-on Manual for food waste prevention could not be of real use for the VET education in Luxembourg, it could be great resource for external stakeholders to implement food waste prevention best practices in their daily basis.

## Malta

### Relevance (3/5)

In regard with food waste, Malta has produced a Waste Management strategy for preventing waste as a whole in the country, in this regard, this [Long Term Waste Management Plan 2021-2030](#) opts for preventing waste from one size fits all perspective, providing insights on how to tackle resource-wisely (Piscopo & Mugliett, 2022).



On the other hand, food waste in education, in general, is barely addressed in Malta, and they do not come from the government. For instance, two private initiatives have been found on the topic of food waste prevention in education: a) [Eco-Schools Malta](#), which focuses on food, waste reduction and appreciation of the outdoors; b) [EkoSkola Malta](#), a program produced by [Nature Trust – FEE Malta](#), which allegedly has become synonymous with ESD at all levels of formal education (Asku et al., 2020).

#### **Adaptation (4/5)**

Therefore, the relevance of the VET LOVES FOOD Hands-on Manual for Food Waste Prevention, for Malta, can be limited, due to the little implication of the of government in fostering initiatives against food waste, understanding it as a single problem. However, as it has been previously demonstrated, Malta's private stakeholders have produced resources to prevent food waste in the education system. In this regard, the VET LOVES FOOD Hands-on Manual for Food Waste prevention could be of great use for VET education in Malta, since all the examples reported previously on preventing food waste in education have been focused on school education. The Hands-on Manual offers a perfect and suitable tool for the stakeholders of Malta's education sector in order to gather insights and best practices to be put into practice within their programmes oriented towards VET education, specifically in those degrees oriented to the HORECA sector.

### **Netherlands**

#### **Relevance (4/5)**

To our knowledge, in the Netherlands national context, there is not such a specific instrument as a tool for food professionals to adapt traditional recipes following a zero-waste approach. However, the landscape of food waste reduction in the Netherlands, especially within the HORECA sector, is dynamic and multifaceted, reflecting a commitment from various stakeholders to address the environmental, economic, and social challenges posed by food waste.

The multifaceted initiatives, collaborative efforts, and integration of sustainability principles collectively contribute to a more resilient and environmentally conscious food service industry. Professionals in the sector are encouraged to explore and adopt best practices emerging from this landscape to minimise their environmental impact.

The Netherlands has been actively engaged in efforts to achieve the Sustainable Development Goals (SDGs), particularly in the context of food waste prevention. Several initiatives and strategies align with various SDGs, contributing to a more sustainable and responsible approach to food production and consumption.

**SDG 12: Responsible Consumption and Production:** The Netherlands has implemented policies and initiatives aimed at reducing food waste throughout the supply chain. This includes measures to promote responsible consumption and production practices within the food industry, including the HORECA sector.

Efforts to optimise food production, reduce overstock, and encourage sustainable sourcing contribute to the broader objectives of SDG 12.

Several initiatives at different levels have been implemented in this country to prevent food waste in this sector, including:

**Government Regulations and Policies:** The Dutch government is fully committed to preventing food waste and has implemented several policies and regulations to combat it. For instance, there are guidelines and regulations in place that encourage businesses in the HORECA sector to measure, report, and reduce their food waste. Regulatory frameworks may include incentives for businesses that actively participate in food waste reduction initiatives and demonstrate sustainable practices.

The Dutch Government also advocates the National Circular Economy Programme 2023-2030

Collaborations between government bodies, non-governmental organisations (NGOs), and industry players. These collaborations often result in the development of joint initiatives, campaigns, and programs aimed at reducing food waste. Public-private partnerships may facilitate the sharing of best practices and resources, fostering a collective effort to address food waste challenges. For instance, the Netherlands Nutrition Centre provides consumers with guidance on minimising food waste, offering tips such as optimising food purchases, enhancing cooking practices, and improving food storage efficiency. The Dutch Alliance for Sustainable Food represents a collaboration between the government and the business community, with key partners including the Dutch Federation of Agricultural and Horticultural Organisations and the Central Bureau for the

Foodstuffs Trade. Their collective efforts are focused on reducing food losses across various sectors, including farms, factories, supermarkets, and the hospitality industry.

Technology and Innovation: Some businesses in the Dutch HORECA sector leverage data analytics, inventory management software, and predictive modelling to optimise food purchasing, reduce overstocking, and minimise waste. Innovations such as smart kitchen equipment and food tracking systems contribute to more efficient operations and better waste management.

Consumer Awareness and Engagement: Initiatives to raise consumer awareness about the impact of food waste are implemented by HORECA establishments. Menus, signage, and educational campaigns may be used to inform customers about the importance of responsible consumption and waste reduction.

Some restaurants may employ creative strategies, such as offering smaller portion sizes, encouraging take-home containers, or promoting "zero-waste" dining experiences. For example the campaign to reduce inhouse food waste United Against Food Waste.

#### **Adaptation (4/5)**

Given the unique landscape of the Netherlands and the evident dedication of both the Dutch government and the business community to the cause of preventing food waste, the Manual for preventing food waste and valorizing traditional recipes and local products produced within the VET LOVES FOOD project, hold significant promise. This manual has the potential to be seamlessly transferred and adapted within the Dutch context, thereby reinforcing the ongoing initiatives in the country.

The Netherlands has already established itself as a trailblazer in the global effort to combat food waste. The Manual, designed with a focus on preventing food waste and promoting the use of traditional recipes and local products, aligns perfectly with the existing ethos of sustainability and environmental responsibility prevalent in the country. The Dutch commitment to reducing food waste is not only reflected in governmental policies but also in the active participation of businesses, creating a conducive environment for the successful adoption of such a manual.

One standout feature of the Manual is the inclusion of a tool specifically tailored for food professionals, empowering them to adapt traditional recipes using a zero-waste approach. This tool is poised to be a valuable asset in a national context where there is a profound

commitment to addressing the challenge of food waste comprehensively. By equipping food professionals with practical strategies and creative techniques for minimising waste in their culinary practices, the manual ensures that these professionals are at the forefront of sustainable food production.

Furthermore, the Manual can serve as a catalyst for collaboration and knowledge-sharing among stakeholders. It can become a central resource that harmonises the efforts of government bodies, businesses, educational institutions, and culinary professionals in the shared goal of reducing food waste. By providing a comprehensive framework and actionable tools, the manual can act as a unifying force, fostering a collective approach to address the intricacies of food waste across various sectors.

In the Netherlands, where there is a well-established culture of sustainable practices and a commitment to achieving the Sustainable Development Goals, the Manual can play a pivotal role. Its adaptability ensures that it seamlessly integrates with existing initiatives, contributing additional features and strategies to enhance the overall effectiveness of food waste prevention efforts in the country.

In conclusion, the Manual for preventing food waste and valorizing traditional recipes and local products has the potential to be a transformative force in the Netherlands. Through its transferability, adaptability, and the inclusion of a tool specifically designed for food professionals, it aligns with the Dutch commitment to sustainability and can serve as a cornerstone in the collective efforts to combat food waste in the country.

## Poland

### Relevance (3/5)

To our knowledge, in the Polish national context, there is not such a specific instrument as a tool for food professionals to adapt traditional recipes following a zero-waste approach. However, Poland has implemented legislative measures aimed at preventing food waste and facilitating the provision of food for social purposes. These efforts are complemented by national programs and strategies that collectively contribute to a comprehensive approach.

Enacted on July 19, 2019, the Act on Food Waste Prevention establishes regulations for the handling of food and imposes obligations on food business operators to prevent food waste. According to the act, food business operators with a sales area exceeding 250 m<sup>2</sup>

must establish agreements with non-governmental organisations to redistribute food not intended for sale, especially due to its appearance or packaging. Additionally, the act mandates these operators and their partner organisations to conduct educational and informational campaigns on food management and waste prevention at least once a year for a minimum of two consecutive weeks. The legislation also introduces food waste fees (PLN 0.1 per 1 kilogram of wasted food) and penalties for non-compliance.

Within the operational program Food Aid 2014-2020 (POPŻ), part of the Fund for European Aid to the Most Deprived (FEAD), specific rules have been implemented to prevent food waste by beneficiaries and partner organisations. These rules encompass storage, packaging, and public procurement aspects, requiring regular monitoring of storage conditions and timely redistribution of foods based on their shelf life. Public awareness and education initiatives under FEAD promote sensible food management and product use among program beneficiaries. Partner organisations are encouraged to collaborate with food business operators to collect and redistribute surplus food for those in need, extending beyond the Food Aid program.

Since 2013, donors providing food for public-benefit organisations in Poland have been entitled to deduct VAT. This provision applies to various food business operators, including manufacturers, distributors, wholesalers, restaurant owners, and caterers, fostering an environment supportive of food donations for charitable purposes.

An example is the Act on Food Waste Prevention Fund for European Aid to the Most Deprived (FEAD). The 2022 national waste management plan outlines several measures designed to address food waste:

- Educational initiatives focused on preventing food waste;
- Collaboration initiatives between the food manufacturing and processing sectors;
- Implementation of green design principles;
- Adoption of environmental management systems, including EMAS, at the company level;
- Public awareness campaigns aimed at preventing and reducing food waste through guidance on shopping, meal planning, and food waste management.

#### **Adaptation (4/5)**

Considering the clear commitment of the Polish government to combating food waste, the Manual for preventing food waste and promoting traditional recipes and local products, developed under the VET LOVES FOOD project, presents considerable potential. This manual holds promise for effortless transfer and adaptation within the Polish context, thereby complementing and strengthening existing initiatives in the country.

For example, enhancing the current Polish public awareness campaigns that target the prevention and reduction of food waste, with a focus on shopping guidance, meal planning, and effective food waste management, could derive additional value by incorporating traditional recipes into a zero-waste methodology.

## Romania

### Relevance (3/5)

In Romania, there are several resources and manuals available to help reduce food waste:

**Food Waste Reduction Handbook for Restaurants and Commercial Kitchens:** This type of manual provides practical tips and strategies for reducing food waste in establishments in the HORECA sector. It can include guidelines on how to manage inventories, plan menus efficiently, properly store food, and use maximising techniques.

**Recipe Guide to Making Better Choices:** This type of resource offers creative ideas and recipes for transforming leftover food into delicious and nutritious dishes. These guides can help households and restaurants get the most out of ingredients and reduce the amount of food wasted.

**Food Education and Consumer Awareness Manuals:** These manuals can target a variety of groups, such as students, consumers, and food workers. They provide information on the importance of reducing food waste, tips on how to plan food purchases, properly store perishable goods, and use leftovers creatively.

**Food Donation Guidelines:** For HORECA establishments and food retailers, the guidelines on food donation can be useful. These guides provide information on how to safely store and handle food for donation to food banks or other charities.

These manuals and resources can be developed and distributed by government organisations, NGOs, food industry associations, and other entities interested in

addressing the problem of food waste in Romania (Ministry of Agricultural and Rural Development, 2023).

### **Adaptation (4/5)**

In Romania we found tools that address the issue of sustainability and there is a growing interest in this aspect, but we have not found tools that address the issue of food waste and sustainability in a global way.

Tools such as the proposed manual can be of great help to interested persons as well as a reference base for the creation of other new tools adapted to the reality of Romania.

## **Slovakia**

### **Relevance (3/5)**

According to the Slovakia Waste Prevention Country Profile 2021:

- Slovakia is considering implementing a ban on food waste landfilling for food originating from the retail sector. This measure aims to encourage retailers to find ways to donate expired food to charities or producers of livestock feed.
- The positive outcomes of the potential ban on food waste landfilling include retailers donating expired food to charities and using it for composting or energy recovery. This move aligns with the circular economy principles of reducing waste and exploiting resources more efficiently.
- Exemptions to the obligation of separate collection of biodegradable kitchen waste from households have been cancelled since January 2021. This change aims to minimise biodegradable waste going to landfills and increase the amount of nutrients returned to cropland through composting.
- The waste prevention measures in Slovakia also emphasise the importance of restaurants and supermarkets in reducing food waste. Proposed obligations include using food, even if out-of-date, by donating it to charity. If the food is no longer fit for human consumption, alternatives such as composting are suggested (European Environmental Agency, 2021).

“Greener Slovakia” - The strategy of the environmental policy of the Slovak Republic for 2030 is the national strategy that determines how to face the biggest environmental challenges and address the most serious environmental problems. The Institute for Environmental Policy (IEP) was responsible for preparation of the strategy document.



However, it is also the result of work performed by experts not only from the Ministry of Environment, but also from other ministries, academia, business sector, local administration and higher territorial units and non-governmental organisations (Ministry of Environment of the Slovak Republic, 2023).

In cooperation with central government authorities and their professional organisations, academia, non-governmental organisations and municipalities, the system of formal and informal environmental education and training for sustainable development will become more efficient. They will receive special attention through the action plans for the implementation of the National Programme of Education and Training. Any participant will gain the knowledge and skills needed to promote the principles of sustainable development (EU Food Loss and Waste Prevention Hub, 2023).

### **Adaptation (2/5)**

Based on the information gathered, it is possible to somehow adapt the hands-on Manual to the Slovakia context.

Slovakia is already considering implementing a ban on food waste landfilling for food originating from the retail sector, which aligns with the circular economy principles of reducing waste and exploiting resources more efficiently. Encouraging retailers to find ways to donate expired food to charities or producers of livestock feed is also in line with the goals of the manual.

Additionally, exemptions to the obligation of separate collection of biodegradable kitchen waste from households have been cancelled since January 2021. This change aims to minimise biodegradable waste going to landfills and increase the amount of nutrients returned to cropland through composting. Incorporating these waste prevention measures in the manual will help promote a zero-waste approach and the culture of food waste prevention and management.

Moreover, the "Greener Slovakia" strategy emphasises the importance of cooperation among government authorities, academia, non-governmental organisations, and municipalities for efficient environmental education and training for sustainable development. This provides an opportunity to activate stakeholders in the challenges of attaining SDGs and raising awareness on food waste prevention, management, and sustainability.

Overall, by considering the existing waste prevention measures in Slovakia, involving relevant stakeholders, and aligning with the country's environmental policies and initiatives, it is possible to adapt the manual to the Slovakia context and effectively promote food waste prevention and sustainability. At the same time, in-depth information regarding existing practices and level of awareness concerning food waste among citizens and especially professionals in the sector is needed for an optimal understanding on how to adapt the manual.

## Slovenia

### Relevance (5/5)

The Ministry of Agriculture, Forestry and Food is particularly aware that regulations covering all parts of the food chain “from farm to fork” ensure that food is safe and traceable. At the same time, the government encourages the production of food that is of good quality in all respects, in terms of nutritional value, taste and appearance. The quality requirements of agricultural products and foodstuffs are laid down by European and national legislation. The purpose of regulating quality, which implies, in particular, technical definitions, classifications, presentations, designations and labelling, is to facilitate the supply of standardised and satisfactory quality products to the market. EU regulations apply to all Member States, while national ones only to the producers of that country. The basic rule is that the marketing of products allowed in one Member State is allowed in all the countries (Ministry of Agriculture, Forestry and Food, 2023).

The issue of product labelling is regulated by legislation that provides consumers with understandable and appropriate information on the content and composition of food products. General labelling is mandatory and uniform for all EU Member States. It includes information on the identity and composition, properties or other characteristics of the foodstuff, the information on the properties of ingredients likely to harm the health of certain groups of consumers, the information on durability, storage and safe use, the information on health impact and nutritional value. It applies to food business operators at all stages of the food chain when their activities involve the provision of food information to consumers. It applies to all foods intended for the final consumer, including food delivered by mass caterers and foodstuffs delivered to them.

Promoting short supply chains and local food are among the priorities of the EU Common Agricultural Policy and a strategic guideline of Slovenian agriculture and food industry.

The Public Procurement Act of 2016 allows public institutions to exclude more foodstuffs from public procurement procedures and to purchase them directly from growers or processors, while, within public procurement processes, to give priority to foodstuffs covered by quality schemes, to foodstuffs produced under the national food quality regulations and to foodstuffs coming from sustainable production and processing.

Activities such as Slovenian Food Day, Traditional Slovenian Breakfast and School Scheme are among the initiatives in Slovenia that contribute to a greater share of local food in public institutions, as there are more than 740 public institutions placing orders for food. More specifically, in all educational institutions, more than 630,000 meals are prepared daily.

Co-financed by the Slovenian state and the involved sectors for 3 years, the “Our food” website was launched to support locally produced and processed food, together with an ad-hoc campaign, and carried out by the Slovenian Ministry of Agriculture, Forestry and Food. The goal is to achieve a 90% customer preference for locally produced food, which would at the same time stabilise and increase local production and processing.

The promotion of local food also includes products with the "chosen quality" certificate and other quality schemes, so that local food producers can register with their produce offer, free of charge, and be visible on a map of producers embedded on the dedicated website (Circe. 2018).

#### **Adaptation (4/5)**

It is somehow feasible to adapt a manual for preventing food waste and promoting sustainable recipes to the Slovenian context. The emphasis on regulations covering the entire food chain, ensuring safety and traceability "from farm to fork," aligns well with the goals of preventing food waste. In the same way, the Public Procurement Act of 2016, allowing public institutions to prioritise local and sustainably produced food, provides a practical avenue for implementing the manual's recommendations. The manual can guide producers and institutions on how to participate in these processes, as well as incorporate information on compliance with these regulations and provide guidance on how producers and consumers can navigate them effectively.

Regarding the existing initiatives mentioned, such as Slovenian Food Day, Traditional Slovenian Breakfast, and the School Scheme contribute to creating a market for local

food, the VET LOVES FOOD, with the manual acting as a complementary tool for effectively engaging in these activities. In addition, given the success of the "Our food" website, aimed at supporting locally produced and processed food, the platform might be an excellent environment for the dissemination of the manual. The manual can be featured on the website, providing practical tips and recipes to both producers and consumers interested in supporting local and sustainable food practices.

## Sweden

### Relevance (3/5)

In Sweden, there have been a couple of milestones regarding waste management throughout the years. Here are a few examples.

#### 1. Municipal Waste Plans (1994):

In 1994, Sweden, as the largest country in Northern Europe with a population of 10.4 million, mandated that all municipalities create municipal waste plans. This legislative requirement empowers municipalities to take charge of local waste management. These plans detail the specific infrastructure necessary for effective waste management and provide guidelines for how households and individuals should segregate and manage their waste.

#### 2. National Goals and Governance:

The Swedish Government plays a crucial role in waste management by establishing national goals. These goals serve as a guide, directing efforts toward effective waste reduction and management strategies. The government's involvement ensures a coordinated and comprehensive approach to addressing waste-related challenges on a national scale.

#### 3. Focus on Food Waste (Targets in 2020):

In 2020, Sweden shifted its focus on food waste beyond recycling. The new targets aim not only to manage waste but also to prevent it at the source. This represents a proactive approach to addressing the issue of food waste, emphasising the importance of reducing waste before it occurs.

#### 4. Specific Targets for Food Waste Reduction (2020-2025):

Sweden has set two milestone targets for reducing food waste:

Target 1 (2020-2025): The goal is to decrease total food waste by at least 20 per cent by weight per capita. This ambitious target signifies a commitment to a significant and measurable reduction in food waste over the specified time frame.

Target 2 (2025): An additional objective is to ensure that a greater proportion of produced food reaches stores and consumers by 2025. This target aims to minimise food losses in the distribution chain, emphasising efficiency and sustainability in the food supply system.

In summary, Sweden's waste management approach involves a combination of local municipality initiatives, national governance, and specific targets to address the broader issue of waste and, more specifically, to significantly reduce food waste. The focus on prevention and specific reduction targets reflects a comprehensive and forward-thinking strategy.

#### Handbook for Reducing Food Waste - Livsmedelsverket - Swedish Food Agency

The Practical Guide for Minimising Food Waste serves as a hands-on resource outlining straightforward measures and adjustments to routines that municipal kitchens can adopt to diminish food waste. Designed for use by cooks, chefs, food service personnel, and managers, the guide is applicable in kitchens involved in the preparation, receipt, and serving of food. Its scope extends to various settings, including those where food is served, such as medical and health care facilities, childcare and adult care facilities, and schools. The primary goal is to ensure that food is consumed rather than discarded, emphasising the importance of directing food to nourish individuals rather than ending up in waste bins.

#### Best Before, Good After

The best-before date on food doesn't tell you if it's safe to eat but indicates how long it will stay at its best quality in terms of taste, colour, crunchiness, and firmness. The quality might go down after this date, but the food could still be okay to eat. The best-before date assumes the food has been stored correctly, and the label often explains how to do this. Storing food colder, like below 8° C, makes it last longer. Even if a food item has been opened, it might still be suitable after the best-before date. For instance, an open milk carton can stay good for a few more days if it's been in the fridge (Livsmedelsverket, 2021).

## Food Waste Quantification Manual - FUSIONS

The FUSIONS project promotes efficient food use and strategies to prevent food waste. To achieve this goal, understanding the quantities of food waste is crucial. The Manual offers practical guidance for Member States, primarily targeted at their authorities. Its purpose is to assist these authorities in developing consistent methods to collect national food waste data across all food chain sectors. The Manual covers three key activities: measuring food waste in each stage of the food chain, combining these measurements at the national level using a common framework, and reporting the results consistently at the country level. Additionally, researchers collecting data on behalf of national authorities and national statistical offices can use the Manual as a reference in their efforts to quantify and address food waste (Tostivint et al., 2016).

### **Adaptation (3/5)**

These manuals, such as the Handbook for Reducing Food Waste from the Swedish Food Agency, the Best Before, Good After guidelines, and the Food Waste Quantification Manual (Matvett, 2018), offer valuable insights and practical strategies that can inspire and inform other countries in their efforts to address food waste. The hands-on approach and straightforward measures outlined in the practical guides for reducing food waste in municipal kitchens, coupled with the emphasis on proper storage and understanding best-before dates, provide adaptable and transferable solutions for kitchens and consumers globally. Similarly, the Food Waste Quantification Manual's structured approach to measuring and reporting food waste at various stages of the food chain serves as a model for other countries seeking to develop consistent methods for collecting and addressing national food waste data. These manuals collectively offer inspiration for promoting sustainable practices and reducing food waste on a broader, international scale.

## **RESULT 3 – VET LOVES FOOD EUROPEAN HUB FOR FOOD PREVENTION AND FOOD WASTE MANAGEMENT**

The European HUB for food waste prevention and food waste management consist of an online platform, serving as a repository of tools and resources such as an e-learning course, a community of trainers and students, and a digital learning environment.

The European HUB for food waste prevention and food waste management can be featured as: a) a communication channel for the VET community, fostering collaboration between VET providers and stakeholders in the food industry in a peer learning

perspective on food prevention; b) a space to share approaches and methodologies to develop green skills and attractive resources to external stakeholders, c) an interdisciplinary and interconnected space (echo chamber) where VET providers can adopt food waste prevention and food waste management habits; d) a repository of materials aimed at helping VET providers to innovate/renovate their training offer and methodologies.

According to the previous description, the following countries have been analysed:

## **Austria**

### **Relevance (3/5)**

In the dynamic landscape of the HORECA sector in Austria, environmentally oriented sustainable practices are perfectly integrated into the mentality of Austrian HORECA businesses. There is a strong desire to create communities and unite in national and international HUBs to improve and integrate food sustainability practices. The following example is proof of this.

The Gastronomy Association that represents the interests of around 60,000 Austrian catering businesses, has launched a Digital campaign against food waste which includes all the practices to promote a 0 km approach and the culture of food waste prevention and management (WKO, 2023). The digital campaign consists of a Sustainable Food Toolkit that provides general background information, describes examples of good practices, and includes suggestions for the practical implementation of a sustainable menu in the hotel and restaurant sector (Futouris, 2023).

The initiative was born from a consortium made up of the lead partner the Gastronomy Association, the Austrian Hoteliers Association (ÖHV) and the Ministry of Labor and Economy. Furthermore, the campaign is promoted by the Austrian Chamber of Commerce (Austrian Hotelier Association, 2023).

The overall objective of the campaign is to highlight the concrete actions being taken by the hospitality sector in Austria and the support it needs to make further progress. The initiative's main targets are all European and national HORECA businesses including VET schools, which are required to include the Sustainable Food Toolkit in their training courses.



Another example found as European HUB for food prevention and food waste management in Austria is: The Sustainable Food Toolkit (WKO, 2023).

### **Adaptation (5/5)**

The VET LOVES FOOD European Hub offers several opportunities, services, information and tools, which could enrich the yet wide contents of the Sustainable Food Toolkit and of the other e-initiatives embedded in the more general platform Climate-friendly hotel cuisine.

The rich and inspiring landscape of the Austrian green and sustainable initiatives would welcome a more kitchen-dedicated hub with a special focus on the HORECA management.

## **Bulgaria**

### **Relevance (3/5)**

With national tools for fostering collaboration between VET providers, the [Modern Education Foundation](#), a national level organisation depending on the Bulgarian Education Ministry aimed at lobbying for key policies in the areas of the general and VET education. This organisation has developed some sort of hub connecting educational centres and stakeholders of the green skills sector at an EU/international level by participating in international projects related with the thematic (Ministry of Agriculture, Nature and Food Quality of Netherlands, 2022).

However, the most relevant initiatives for connecting and sharing knowledge with other stakeholders and educational centres on the field of green skills are driven by Bulgarian Small and Medium Enterprises (SMEs), connecting with EU and international partners working the field of green skills through EU funded and international projects (CEED Bulgaria, 2023), such as:

- [GreenVETnet](#) (CEED Bulgaria), 01/01/2022 – 31/12/2023: project aiming to support the European Green Deal and reflecting the importance of skills, knowledge, and attitudes on environmental change and sustainable development, the project aims to work on the overall objective to further mainstream the integration of sustainability aspects in VET by enhancing the competences (of staff involved in VET) on sustainable development.

- [INGENIOUS](#) (Greentech Bulgaria), 10/05/2021 – 28/02/2023: project aiming to build an innovative training model and path through determining the level and assessment of digital and green skills of teachers in the field of vocational education and training (VET), as well as development of innovative VOOC platform with integrated courses and learning content (Cleantech Bulgaria, 2023).

At a local level, the city of Sofia takes part in the following projects focused on green skills and green education, which are promoted and funded by EU or international funds and not by Bulgarian national initiative:

- [Development of Green Skills for Better Employability – DEGREBE](#), 2021 - 2025: the project aims to develop a digital educational package for elaborating innovative approaches, digital technologies and entrepreneurial skills for a green economy.
- [Towards Green Transition Facility – TGTF](#), 03/05/2021 – nowadays: the aim of the project is to popularise the theme of "green" transformation and to provide direct support for the development, introduction and cooperation in the use of "green" business models.

According to the present research, it can be stated that Bulgarian industries, education centres, and stakeholders revolving around the concept of sustainability are clustered in different hubs; however, usually those hubs are European or international. The study around this matter demonstrates a clear lack of initiative of the national public sector in fostering dialogue among the stakeholders oriented to the green sector.

#### **Adaptation (4/5)**

Seemingly, the European Hub for food prevention and food waste management can be a useful and interesting tool to be implemented in Bulgaria. According to the previous research, it can be stated that companies, organisations and stakeholders interested in green skills have already been clustered and organised in different HUBs on the topic. Thus, there is a high demand for these kinds of communication and ideas-sharing channels in Bulgaria. That is to say, there is a niche of opportunity that the Bulgarian national government is not covering, which role is being replaced by European funded or international projects, as it has been addressed previously. This point links to another important remark, since many of the green skills' stakeholders have been already clustered and have networks in the framework of different EU funded Projects, the

implementation of a new EU funded hub would be easier, due to the probable previous experience.

EU hubs on green skills have been proved to be demanded by Bulgarian stakeholders, and stakeholders have proved to be acquainted with this kind of EU hubs, since the majority of the different clusters on green skills in Bulgaria correspond to EU funded networks. Therefore, in a first sight, the VET LOVES FOOD European Hub for food prevention and food waste management would be a demanded tool in Bulgaria, as well as a reliable and relatable experience for the users. According to the previous statements, it has been considered that the VET LOVES FOOD hub can be a good asset for the Bulgarian educational context as it is, since its functionalities foster dialogue and communication among different stakeholders of the entire European region and beyond.

On the other hand, as it has already been proved along the different results, the education on green skills and food waste prevention is scarce in the Bulgarian educational context, specifically in VET education. Therefore, the e-learning course From Waste to Taste has been considered extremely relevant to raise awareness on the importance of green skills implementation and food waste prevention, always in VET education and, more specifically, in the VET education in the HORECA sector in Bulgaria.

The e-learning course From Waste to Taste is a key tool for the development of consciousness of green skills related to the HORECA sector and food waste prevention, since it offers an intuitive and holistic perspective to be considered when addressing food waste prevention and green skills implementation in the HORECA sector. The usefulness of the present e-learning course within the Bulgarian context strives in its comprehensive and bottom-up approach, starting from the definition of food waste and finalising with key tools and resources to be implemented practically in the daily-basis of staff and students of the HORECA sector.

## Croatia

### Relevance (2/5)

Many of the tools and platforms at the national level in Croatia have a strong promotional connotation and are structured in a very open and user-friendly manner, to allow interaction with both the world of institutions, but also with end consumers and professionals.

There is, however, also a willingness on the part of the private sector to put itself at the service of households and end users, promoting, alongside services and products, practical information, news and suggestions, useful for more sustainable waste management (including food waste) (One Planet, 2024).

Examples:

[FOODWASTE BLOG](#) : FOODWASTE is a company dedicated to the sale of machinery and tools aimed at combating food waste. In addition to offering innovative solutions for reducing food waste, the company also maintains a blog that provides valuable recommendations and tips.

This blog serves as a resource for individuals and businesses looking to minimise their environmental impact and adopt more sustainable practices in their approach to food consumption and impart knowledge on how to cultivate a culture of food sustainability.

The blog particularly focuses on educating young individuals, fostering an understanding of the importance of responsible food practices and encouraging the adoption of sustainable habits to contribute to a greener and more environmentally conscious future

At the public level, the Waste prevention portal promotes information which can help visitors in planning waste prevention activities and implementation of waste prevention principles in life habits and/or work processes. Here are some examples of available information:

- guidelines and instructions for waste prevention,
- descriptions of waste prevention activities and projects in the local authority units,
- waste prevention examples from the European practice,
- waste prevention indicators.

#### **Adaptation (4/5)**

The hub developed by the Vet Loves Food project is very well constructed and provides the end user with an integrated experience of content and general information, and the possibility of attending a training course in 5 modules.

Its content can be adapted to existing Croatian platforms, both nationally operated and more local or private ones.

Furthermore, the possibility of introducing national best practices into the project hub can serve as a showcase for companies wishing to espouse the objectives of the project.

## Cyprus

### Relevance (3/5)

In Cyprus, communication and networking channels among HORECA stakeholders appear underdeveloped, posing a challenge despite the sector's economic significance. The current situation indicates a lack of communication tools and networking infrastructure for sustainable practices, hindering widespread adoption.

Despite these challenges, there are signs of progress with some initiatives working to address this gap. While the landscape highlights room for improvement, these initiatives represent positive steps toward fostering communication platforms and networking structures for sustainable practices within the HORECA sector. Addressing this gap is crucial for creating a more cohesive and sustainable HORECA industry in Cyprus (Zero Waste Cyprus, 2023).

### Green-dot Cyprus

Green Dot Cyprus is the first collective recycling system approved in Cyprus and is a non-profit organisation.

- It was established based on the Packaging Law and Packaging Waste Law N32 (I) / 2002, which determines the responsibility of companies for recovery and recycling of packaging that they place on the market.
- It was licensed on August 1, 2006 as a packaging management system and took collective responsibility on behalf of its member companies.
- It took over the operation of AFIS Cyprus in November 2007 and of WEEE in September 2007.
- On December 1, 2020, it took over the management of the Non-Packaging Paper Waste Management Company (ΔΙ.ΧΑ).
- It has 1250 active members who constitute the largest part of the Cypriot business.
- It works closely with the Department of Environment, local authorities and all major recyclers in the country.
- It serves more than 80% of the population of Cyprus (Green Dot, 2023).

Food Waste Prevention

[Zero Food Waste Cyprus](#) is an initiative by young volunteers to reduce food waste by collecting "food waste" from local markets and redistributing it to those in need. The bi-communal initiative has two projects. One market in Nicosia and one in Kyrenia, reaching more people in need and involving more young volunteers to support our cause.

The Rescued Box Initiative aims to combat food waste and actively contribute to solving the problem by buying seasonal produce from local farmers who are all certified and comply with EU directives. Each week they receive a recyclable box of the freshest fruit and vegetables on the island. This avoids food waste from excess produce and the use of plastic and reduces the environmental footprint by optimising delivery routes. Rescued Box donates 10% of the proceeds each week to charities fighting hunger (Rescued Box, 2023).

### **Adaptation (5/5)**

Cyprus revealed great sensitivity to the issue of environmental sustainability and the fight against waste, especially food waste. The various initiatives identified as examples bear witness to this environment that is so active on the subject.

The integration of the contents of the Hub of the VET LOVES FOOD Project (or part of it), is not only potentially feasible, but certainly desirable, due to the added value that would be recognised to existing initiatives.

The various platforms, in fact, could benefit from comprehensive training, absolutely inherent to the theme of sustainability and waste management, but from an even more innovative and perhaps less explored perspective: that of food waste reduction.

## **Czech Republic**

### **Relevance (3/5)**

Even though there is no clear reference to a European HUB based in the Czech Republic, several of the researched projects have similar aspects to it. Firstly, it is essential to highlight the presence of projects of the European Union that also have initiatives within the Czech Republic, such Projects like Growing green and "Skills Needs for Sustainable Agri-Food and Forestry Sectors". They provide insights and recommendations for fostering green skills development and innovation in the agri-food sector. The projects emphasise the importance of developing a common framework of green skills and promoting work-based learning

The "Národní rada poradenství a vzdělávání pro zemědělství a rozvoj venkova" (National Advisory and Training Council for Agriculture and Rural Development) and "[Project EU Dare](#)" serve as platforms for knowledge exchange and collaboration between VET providers, businesses, and experts in the food industry. These initiatives facilitate peer learning and sharing of best practices in food waste prevention.

Also, platforms like "Enviroportal" provide interactive tools and case studies related to food waste prevention, enabling VET teachers to develop innovative curricula. Additionally, initiatives like "Povinným školením ekologického zemědělství" (Compulsory training in organic farming) offer workshops where VET providers, experts, and farmers come together to discuss and share approaches to sustainable food production and waste management.

Projects such as "Projekt 'Ovoce do škol'" foster a mindset shift towards responsible food practices by integrating food waste prevention modules into existing curricula. These initiatives create an interconnected space within VET programs where students and professionals can adopt sustainable habits and practices (CEDEFOP, 2023).

#### **Adaptation (4/5)**

While a European hub for food waste management isn't explicitly mentioned, various projects contribute to the dissemination of knowledge and best practices in this field. The projects contribute to creating an interdisciplinary and interconnected space by addressing various aspects of sustainability and food waste prevention. The policy brief emphasises the importance of green skills development, while the project focuses on specific actions related to food waste reduction.

#### **Denmark**

##### **Relevance (5/5)**

Denmark has demonstrated to be at the vanguard of sustainability and food waste prevention during the latest decades in the European context. The aforementioned food waste prevention hubs, [One/third](#) and the [Stop Wasting Food Movement](#) are proof that the country is aimed at attaining to the SDG 12.3 – Halve global per capita food waste.

One/third can be defined as a think tank depending on the Danish government which is mainly focused on supporting civil society in the fight against food waste; offering insights on how to overcome barriers to preventing food waste and food losses; and



cooperating with foreign partners on know-how and sharing of experiences. Likewise, the Stop Wasting Food movement is committed to attaining the SDG 12.3 by bringing the focus to food waste prevention, in collaboration with the Danish government and international institutions (EU Food Loss and Waste Prevention Hub, 2023).

These two examples demonstrate the firm collaboration between the Danish government and non-governmental associations on sustainability and food waste prevention. Although the afore-mentioned organisations are the most widely recognized abroad, Denmark counts with a wide range of initiatives (both public and private) on the topic of food waste prevention and sustainability, such as:

- [The Food Waste Think Tank](#): new Danish apolitical think tank to gather knowledge and develop action plans to combat food waste.
- [Redfood Label](#): Launched in 2014 and promoted by Stop Wasting Food Movement Denmark (Stop Spild Af Mad), the Danish Agriculture & Food Council, Unilever Food Solutions, Agro Business Park and DakaReFood. Its aim is to implement a National Label for the Sustainable cafes and restaurants in Denmark. The label will expand to food producers and products in the near future, and it is also planned for the label to become international.
- [Green Menu Planner](#): online kitchen tool that combines inspiration, menu planning and ordering. Green Menu Planner addresses both canteens and daycare centres.

According to several sources of information, there are also many regional and local initiatives on food waste prevention and management in almost all the Danish municipalities (De Lorenzo, 2021).

The afore-listed initiatives are not only governmental, but they also encompass private initiatives promoted by different stakeholders of the agro-food sector. This information is key because it shows perfectly how the Danish governmental initiatives, stakeholders' initiatives of the agro-food sector and civil society initiatives intertwine towards the common objective of preventing and managing food waste (FUSIONS, 2016).

This piece of information is also very relevant according to the following viewpoint: only three relevant actors in the food waste landscape compose the Danish “coalition” against food waste: government, stakeholders and civil society. It is true that some papers mention small actions to raise-awareness on the problem of food waste in school

education. Nevertheless, there are not real common spaces for professionals, professors and students of the HORECA sector where to learn efficient measures to tackle food waste in their professional/learning environments and where to share their best practices on how to prevent and manage the problem. Somehow, it seems that, although the food waste problem is quite a concern for Denmark, in the moment of approaching it efficiently, education has been left behind, especially VET education oriented to the HORECA sector (Dahl et al., 2023).

### **Adaptation (5/5)**

This resource is highly important for the development of the policies on food waste prevention and management of Denmark. The adaptability of the product to the country's dynamics should be truly smooth since the country already counts with an intertwined system of hubs formed by very different stakeholders and relevant actors within the landscape of the food waste problem. Integrating one more layer to the already interlinked web of food waste fighters not only should be relatively easy, but also could provide a wider perspective on how to approach food waste prevention and management.

In this regard, the VET LOVES FOOD hub and the e-learning course from waste to taste result to be ideal to fill in an observable gap in the Danish strategy against food waste: the education system. In Denmark, the education system seems to be approached more as a passive actor (recipient of information) on the topic. However, the education system has proven to be a key actor to tackle food waste, especially when talking about education directed towards the HORECA sector.

VET providers and teachers in the sector have a key role shaping the working ethics of the chefs-to-be, and the chefs-to-be will apply the knowledge that they are receiving today in the HORECA sector of tomorrow. This is the reason why the VET LOVES FOOD hub and, especially, the e-learning course From Waste to Taste are essential in Denmark, since they provide a set of tools and methodologies for teachers and students of the HORECA sector on how to manage food waste and on how to understand cooking in a more sustainable way. Besides, they enhance communication among peers in the same sector, which foster critical thinking, new ideas and best practices sharing within the sector.

## **Estonia**

### **Relevance (3/5)**

As it has been commented throughout the document, Estonia is on the wave of green transition, trying to direct their efforts to greening their policies, which is translated also in the joining to the following groups:

- [European Circular Economy Stakeholder Platform \(ECESP\)](#): Estonia could engage with ECESP, an initiative led by the European Commission that brings together stakeholders from across sectors to promote the transition to a circular economy. Within ECESP, Estonia can share insights and collaborate with other European countries on strategies for reducing food waste and promoting circularity in resource management.
- [EU Platform on Food Losses and Food Waste](#): Estonia participates in the EU Platform on Food Losses and Food Waste, which brings together EU member states, industry stakeholders, NGOs, and international organisations to exchange best practices, monitor progress, and develop policies to tackle food waste throughout the food supply chain (OECD iLibrary, 2023).
- [European Innovation Partnerships \(EIPs\)](#): Estonia may engage in EIPs related to agriculture, food, and the environment, such as the EIP on Agricultural Productivity and Sustainability or the EIP on Water. These partnerships aim to accelerate innovation and promote sustainable practices, including initiatives focused on reducing food waste and promoting resource efficiency (Weghmann, 2023).
- [European Sustainable Development Week \(ESDW\)](#): Estonia participates in ESDW, an annual initiative coordinated by the European Commission to raise awareness and promote actions supporting the UN Sustainable Development Goals (SDGs). Estonia could organise events, campaigns, or initiatives during ESDW to highlight its efforts in food waste prevention, sustainable agriculture, and green transition.
- [European Climate Pact](#): Estonia joins the European Climate Pact, an initiative launched by the European Commission to engage citizens, communities, businesses, and organisations in climate action. Through the Climate Pact, Estonia can showcase its commitment to reducing greenhouse gas emissions, enhancing energy efficiency, and promoting sustainable consumption practices, including initiatives targeting food waste reduction and environmental conservation (European Commission, 2020).

### **Adaptation (5/5)**

The VET LOVES FOOD hub is completely adaptable to Estonia, since the format of the hub is similar to those already implemented in the country. In this regard, it is observable that, according to the previous hubs analysed, the country is still lacking a EU hub on food waste prevention and green transition which focuses mainly in the education sector. Through the VET LOVES FOOD EU hub, Estonia can find a great educational tool for VET centres on how to prevent food waste and implement green practices in the HORECA sector. Besides, the VET LOVES FOOD hub acts as a great repository of contacts of members of the education sector worldwide, focused on providing education on food waste prevention and implementation of green practices.

## **Finland**

### **Relevance (3/5)**

While no single entity matches this description precisely, various projects and organisations serve as communication channels, spaces for sharing approaches and methodologies, interdisciplinary hubs, and repositories of materials for VET providers in the food industry. These initiatives foster collaboration, knowledge exchange, and innovation in sustainable food practices (Ministry of Agriculture and Forestry of Finland, 2024; Finland Forum, 2023).

Initiatives like the Sustainable Food System Networks established by the Finnish Ministry of Agriculture and Forestry and the Food Forum Finland platform facilitate communication and collaboration between VET providers and stakeholders in the food industry. These platforms organise events, discussions, and knowledge-sharing activities to promote peer learning and exchange best practices. Additionally, projects such as Sitra's Kestävä ravintola (Sustainable Restaurant) Guide offer practical resources and methodologies for developing green skills and implementing food waste prevention strategies. These resources include training modules, toolkits, and online platforms for sharing information and fostering innovation (FOODPAIRING; 2023; Ministry of Agriculture and Forestry of Finland, 2024).

### **Adaptation (3/5)**

While these Finnish initiatives serve as valuable models, they can be adapted and replicated in other contexts within Europe. VET providers and stakeholders in different

countries can establish similar communication channels and platforms tailored to their specific needs and local food systems. By leveraging existing networks and resources, such as those provided by the Erasmus+ program and national ministries, organisations can create interdisciplinary hubs for exchanging knowledge and promoting sustainable practices. Furthermore, collaboration with international partners and participation in pan-European projects can facilitate the sharing of experiences and the development of innovative solutions to food waste management across borders.

## France

### Relevance (3/5)

As previously mentioned, the educational system in France is undergoing significant changes to harmonise education and training in the agro-food sector with the demands arising from the ongoing green transition. This transformative initiative reflects a dedicated commitment to ensuring that educational offerings are not only responsive to current industry needs but are also attuned to the evolving sustainability and environmental considerations within the agro-food domain.

Within this landscape, VET providers are playing a pivotal role by actively engaging in collaborative endeavours with agro-food businesses. Through ongoing dialogue and partnership, educators gain valuable insights into the industry's nuanced needs, allowing them to tailor training programs that align with the dynamic and evolving demands of the green transition in the agro-food sector. Furthermore, this collaborative spirit extends beyond individual businesses to encompass industry associations and organisations that act as influential stakeholders in the agro-food sector.

In essence, the collaborative efforts within the French agro-food sector underscore a holistic approach to education and training. This approach seeks to equip learners not only with the technical skills required by the industry but also with a deep understanding of the principles and practices integral to the green transition. The symbiotic relationship between VET providers, agro-food businesses, and industry associations contributes to the cultivation of a workforce that is not only proficient in traditional skills but is also well-prepared to navigate the challenges and opportunities presented by the evolving landscape of sustainability in the agro-food sector.

Examples:

- Programme Régional Sectoriel de Formations dans l'Environnement 2009-10
- SIRENA: an information system for agricultural training courses that facilitates online registration for students

### **Adaptation (4/5)**

By tailoring the VET LOVES FOOD Hub to the unique needs and nuances of the French vocational education landscape, it becomes a dynamic platform that facilitates seamless collaboration. The integrated hub acts as a centralised repository, ensuring that VET providers have ready access to a wealth of resources. This repository spans a diverse range of materials, from curriculum enhancements to training modules and best practices. This accessibility streamlines the process of acquiring high-quality resources, contributing to the continuous improvement of vocational education programs across the French national context.

In addition to serving as a resource hub, the VET LOVES FOOD platform would contribute to ongoing professional development for educators. It highlights training opportunities, showcases advancements in teaching methodologies, and keeps educators informed about industry standards and requirements.

By integrating the VET LOVES FOOD Hub into the French context, the aim is to create a tailored and responsive platform that not only supports VET providers but also contributes to the broader national agenda of enhancing the skill sets of the workforce. This adaptation reflects a commitment to excellence in vocational education, ensuring that it remains a driving force for individual and economic growth within the specific dynamics of the French educational landscape.

## **Germany**

### **Relevance (3/5)**

Germany has shown a significant level of initiative both at government level and in civil society to promote sustainability in the HORECA (Hotels, Restaurants and Catering) sector. Dialogue between green sector actors, including businesses, educational institutions and organisations, has been a priority in the country. The following are some aspects that indicate the existence of initiatives in this regard:

Government Policies and Regulations:

Germany has implemented environmental policies and regulations that promote sustainability in various sectors, including HORECA. These policies often seek to incentivize greener practices and reduce the environmental footprint.

#### Eco-Certifications and Labels:

The existence of government-backed eco-certifications and labels, such as the "Blauer Engel" (Blue Angel) seal for eco-friendly products and services, indicates a focus on promoting sustainable practices, also in the HORECA industry.

#### Sustainable Networks and Partnerships:

Sustainable networks and partnerships have been established in Germany that promote dialogue and collaboration between actors in the HORECA green sector. These networks often receive government support or recognition.

#### Investments in Research and Development:

The German government has invested in research and development initiatives focused on sustainable practices, including those related to waste management, energy efficiency and responsible use of resources in the HORECA sector.

#### Education and Training Programs:

Training and capacity building programmes have been launched for professionals in the HORECA sector to promote knowledge and implementation of sustainable practices. These programs are often supported by the government.

#### Participation in International Agreements:

Germany has been part of international agreements that promote sustainability, such as the United Nations Sustainable Development Goals. This indicates a nationwide commitment to address environmental challenges, including those related to the HORECA sector.

#### Economic Incentives:

The German government has provided economic incentives, such as subsidies and tax benefits, for companies and HORECA establishments that adopt more sustainable practices.

#### Participation in European Initiatives:



Germany, as a member of the European Union, has been involved in European initiatives and programmes that seek to boost sustainability in various sectors, including HORECA

In Germany, there are various channels and platforms for the vocational training community and stakeholders in the food industry, especially in the context of food prevention and peer learning. Here are some examples of these channels:

#### Vocational Training Centres:

Vocational training centres and educational institutions play a key role in the training of professionals in the food industry.

#### Industry Associations and Guilds:

Associations and guilds related to the food industry are effective platforms for the exchange of knowledge and experiences between professionals. Events, seminars and workshops organised by these entities can facilitate peer-to-peer learning.

#### Online Platforms and Virtual Communities:

Online platforms and virtual communities dedicated to professional training in the food industry allow interaction and exchange of information between professionals. These spaces may include forums, discussion groups, and educational resources.

#### Food Industry Events and Fairs:

Events and trade fairs specialising in the food industry offer opportunities for peer training and learning. These events typically include presentations, demonstrations, and panel discussions focused on specific topics, such as food prevention (HFS, 2023).

### **Adaptation (4/5)**

Germany's assessment of the creation of a European Centre for the Prevention and Management of Food Waste could depend on a number of factors, including:

#### Experience and Commitment to Sustainability.

Germany has shown a strong commitment to sustainability and waste management. Their experience in implementing effective environmental policies could positively support the creation of a European hub.

#### Coordination at the national level:

Germany already has national policies and programs in place to address food waste. The creation of a European hub could align with existing efforts and strengthen coordination at national and European level.

#### Active participation in European initiatives:

Germany has been an active participant in European initiatives and has a history of collaboration on environmental issues. Their support for the creation of a hub could be linked to their vision of a joint approach to shared challenges.

#### Investment in Research and Development:

Germany, as a leader in research and development, could see the creation of the centre as an opportunity to drive innovation in technologies and practices related to food waste prevention and management.

#### Emphasis on the Circular Economy:

The promotion of the circular economy is high on Germany's sustainable agenda. A European centre aligned with these principles could receive positive support.

#### Private Sector and NGO Participation:

Germany has an active civil society and a strong presence of NGOs and companies committed to sustainability. The establishment of the centre could benefit from collaboration with these stakeholders.

#### Economic and Social Impact:

Germany could assess the economic and social impact of the creation of the centre, considering how it would contribute to the well-being of society and the generation of employment.

#### Adaptation to the National Reality:

Germany could assess the centre's ability to adapt to national and local realities, recognising the differences in food waste generation and management within the country.

#### Leadership in Regional Initiatives:

Germany has shown leadership in regional initiatives. Their support for the creation of the centre could be perceived as an extension of this leadership on environmental issues.

Ultimately, the alignment with the national and European objectives of the centre makes it possible to say that a European centre for the prevention and management of food waste has a high utility and a high profit potential for Germany.

## Greece

### Relevance (3/5)

In the case of Greece, the lines of work in the field of sustainability are driven by government policies, non-governmental organisations (NGOs) and business associations. To this end, the following general strategies adopted to promote sustainability are established:

1. Save energy resources.
2. Take advantage of nearby resources: Use local resources.
3. Implement the principles of the circular economy.
4. Environmentally manage transport.
5. Investment in social and environmental projects.
6. Promoting diversity and inclusion.
7. Transparent communication with the outside world.

As for the prospects of the food sector, it is worth mentioning that it is in constant movement and innovation, driven by new technologies and consumer trends. In Greece, productive innovations are expected to continue to create new opportunities, which will help reduce costs, use new resources and reduce the environmental footprint of the agri-food sector.

For its part, the Greece 2.0 Recovery and Resilience Plan plans to allocate 3,743 million euros for projects to modernise and improve sectors, including agriculture. More specifically, its objective is the digitalisation of Horeca and food. In addition, it should be noted that the Pissaridis report and the National Strategic Reference Framework 2021-2027 also promote the modernization of agriculture in the coming years.

All these strategies are not equipped with a system that brings together all the elements related to sustainability that can contribute to their full development.

Greece has been working on several projects to promote sustainability:

GR-eco Chalki:

The small island of Chalki, west of Rhodes, is set to become a pioneer of sustainability. With a fleet of photovoltaic systems, electric cars and a 5G network.

The co-lab emerges.

The promoters of this project are the TUI Group and the Care Foundation, as well as the government of the South Aegean. The aim is to make Rhodes an international pioneer in the sustainable development of holiday destinations.

Greece 2.0:

The government of the southern European country wants to make the economy more sustainable.

Transition to the elimination of the use of coal.

Greece plans to phase out all coal-fired power production by 2028 (TripLegend, 2023).

#### **Adaptation (4/5)**

Greece is a country with an emerging development in the field of sustainability, driven in part by European initiatives and policies, it also presents a remarkable development in the area of innovation, being outstanding in this area in recent years, it presents strategies for sustainable development in different important areas such as food, education and digitalisation, but it does not have developed tools able to articulate elements that contribute to the development of these strategies, in this case the European HUB for food prevention and food waste management can be one of those means that make it possible to develop these strategies.

### **Hungary**

#### **Relevance (3/5)**

The cited projects demonstrate a concerted effort in Hungary towards addressing food waste prevention and promoting sustainable practices, with varying degrees of focus on collaboration, resource-sharing, and innovation in VET institutions. While there isn't a single European hub specifically identified for food waste management, these projects collectively contribute to creating a supportive ecosystem for knowledge exchange and capacity building in the field. They offer valuable resources and platforms for VET

providers to engage with stakeholders, adopt best practices, and enhance their training methodologies to integrate green skills into agro-food curricula (Association of Conscious Consumers, 2023).

Project 1, the Élelmiszermentési Nemzeti Akcióterv (National Food Waste Prevention Action Plan), stands out for its comprehensive approach, providing guidelines and educational materials specifically tailored for VET institutions in the hospitality sector. Similarly, Project 2, Élelmiszermentés.hu - Élelmiszermentő Közösség, offers workshops and educational materials targeting food businesses, including VET students, to promote food waste prevention strategies. These initiatives serve as effective communication channels for the VET community, facilitating collaboration between VET providers and stakeholders in the food industry (MyFarm, 2023).

#### **Adaptation (4/5)**

The projects cited can serve as valuable resources for interacting with a similar initiative like VET LOVES FOOD. By leveraging the insights and methodologies shared in these projects, VET LOVES FOOD can enhance its efforts in developing green skills within agro-food curricula. The communication channels and interdisciplinary spaces provided by these projects offer opportunities for VET teachers, trainers, students, and schools to exchange ideas, share approaches, and innovate in food waste prevention education. Collaborating with these existing projects can enrich the offerings of VET LOVES FOOD, fostering a stronger network of stakeholders committed to sustainable practices in the agro-food sector.

### **Ireland**

#### **Relevance (4/5)**

VET and FET training in Ireland is under the Authority of [SOLAS](#), responsible for overseeing the development and implementation of [related policies](#), and providing a centralised platform for communication and collaboration among VET providers. [Education and Training Boards Ireland \(ETBI\)](#) serves as a national organisation that fosters collaboration, shares best practices and provides support to VET providers, while the local ETBs are responsible for the provision and coordination of education and training at a regional level. Although the ETBs operate within their specific geographical area, they often collaborate on broader initiatives, policies, and projects that benefit

multiple regions, while maintaining autonomy in decision-making related to local priorities and needs (Education and Training Boards Ireland - ETBI, 2024).

In 2018, and subsequently updated in 2023, Ireland's Department of Education and Department of Further and Higher Education, Research, Innovation and Science, along with the Department of Children, Equality, Disability, Integration and Youth, developed the [National Strategy on Education for Sustainable Development in Ireland](#) (ESD to 2030). This strategic framework traces a course for the education sector toward a more sustainable future (Government of Ireland, 2018).

Within the ESD to 2030, Priority Action Area 1, titled "[Advancing Policy](#)," holds collaboration as a pivotal component. The emphasis is on strengthening international, interdepartmental, and multi-stakeholder coordination to facilitate information exchange, enhance accountability, and encourage engagement in ESD .

Priority Action Area 3 concentrates on "[Building Capacity of Educators](#)." This involves the development of ESD capacity among educators across formal and nonformal education levels. The strategy underscores the value of peer learning, promoting opportunities for it, and facilitating the sharing of good practices.

Lastly, Priority Action Area 5, "[Accelerating Local Level Actions](#)," underscores both Community linking and collaboration and Local authority engagement. The former seeks to nurture collaboration between education providers and local communities, social organisations, and local authorities. The latter aims to drive the development of action plans by local authorities, fostering coordination with enterprises and other stakeholders committed to sustainable development (SOLAS, *ibidem*).

Some examples of initiatives that promote collaboration between VET providers and the industry aiming to align education and training programs with the evolving needs of industries that prioritise environmental sustainability are:

- Skills to Advance: supported by the Irish government, encourages collaboration between VET providers and industry stakeholders. This initiative focuses on upskilling employees and addresses the evolving skill needs of the workforce, including those related to sustainability and green skills;
- Green Skills Action Plan: designed to address the skills needs arising from the transition to a green economy, involves collaboration between education and training providers, employers, and other stakeholders to develop and deliver training programs that emphasise green skills.

Besides government-led initiatives, there are others developed by schools or by actual companies, and some of the most relevant are:

- AIB Future Sparks: with over 630 schools registered, this programme is designed to support young people in Ireland by providing educational resources, experiences, and opportunities to enhance their skills and knowledge. The program aims to empower and inspire the next generation, helping them to navigate the challenges of the future while offering support to teachers and parents, all this through the use of an online platform.
- Climate Smart: an initiative aimed to raise awareness about climate change adaptation promoted by the Climate Smart team, led by Prof. Anna Davies from Trinity College Dublin and An Taisce's Environmental Education Unit.

From this research is possible to understand that Ireland is focused on promoting sustainable education within the VET sector, however, even though some initiatives promote the proximity with sustainability and green skills, it seems to be very generalised, without going deeper on any topic, including food waste prevention and management, which also happens with the non-government-led initiatives.

Nevertheless, the interest in sustainability topics exists, and the government is leading the way towards achieving a more sustainable future through education.

#### **Adaptation (4/5)**

From the developed research, the VET environment in Ireland is shown to be very collaborative by nature. Schools tend to work with each other to implement national education policies and initiatives, ensuring consistency and standardisation across different regions. ETBs also share best practices, innovative approaches, and successful educational models, which help to improve the quality of education and training services across the country. This collaboration also reflects on professional development through the implementation of joint training sessions, seminars, etc. Besides this, VET providers in Ireland also share resources, advocate together for policies and funding, coordinate services, and collaborate on research projects and innovative initiatives.

It is also important to note that this collaboration doesn't undermine each ETB's autonomy in decision-making regarding their school and community.



The Irish government is also committed to improving VET by adding sustainable topics and the development of green skills to its curricula, showing a strong desire to achieve the established goals, and considering the number of VET and FET courses related to the agro-food sector, the VLF European HUB presents itself as a tool that could be perfectly integrated into the Irish's curricula, combined with the collaboration record among the different ETBs.

## Latvia

### Relevance (3/5)

Eco-Schools is the most wide-reaching programme in Latvia on environmental issues, and it encourages kids to “pursue sustainable lifestyles in schools, households, and communities through a variety of activities”. After two years of efforts towards sustainability, participating schools receive a green flag, which is an international award that recognizes excellence in environmental action and learning. Only in Latvia, the programme involves around 200.000 students and 200 schools, from different educational levels (European Social Fund Plus, 2022).

When it comes to collaboration between VET providers and industry stakeholders, it is important to note that since 2015, VET can take the form of a work-based learning, with flexible curricula taking place alternately at school and enterprise.

Also, the Employers' Confederation of Latvia started a national-level ESF project (2017-23) that allows enterprises, vocational schools and students to receive financial support while completing their participation in the project. Companies are motivated to provide apprenticeships for a variety of reasons, including the opportunity to create a positive image of the company in society and the chance to receive financing from the ESF project, among others. Different collaboration mechanisms are promoted by the PINTSA – tripartite national level council, SEC – sector expert councils and Conventions at the level of VET institutions, where VET programmes, examination and work-based learning are discussed (CEDEFOP. 2021).

The initiative known as "Supporting Employers to Enhance Skills Development in Latvia" aims to assist employers in upskilling and reskilling their workforce. One of its key outcomes is the creation of "guidelines for a novel regulatory framework and a roadmap outlining support measures." The project will actively encourage the advancement of STEM across various Vocational Education and Training (VET)

domains, incorporating environmentally friendly aspects as well. To foster increased collaboration, the project will experiment with a new stakeholder engagement model, involving VET entities, higher education and research institutions, and labour market participants (OECD, 2022).

This innovative approach seeks to enhance permeability among VET, higher education, and adult learning sectors.

### **Adaptation (3/5)**

From the research developed, no information was found about tools and spaces that allow for collaborative practices among VET providers and food industry stakeholders.

Collaboration seems to exist in the form of internships, which happens through the encouragement of companies through financing, and through other councils and conventions where topics about VET are discussed. However, innovation areas such as greening, new forms of partnerships, advanced business, etc., are still underdeveloped.

Therefore, efforts for the development of skills for the green transition are directly linked with the overall attention of VET stakeholders to develop STEM-related skills first.

Nevertheless, efforts are being made through the development of a regulatory framework for engaging companies, new collaborative platforms (currently tested), but also career guidance, which could help the VET system meet the needs of an innovative, inclusive, and sustainable economy, including the development of skills for the green transition.

That being acknowledged, Latvia may not currently be prepared to establish a HUB for food prevention and waste management, as collaboration among VET providers and stakeholders is presently centred on different topics. Nevertheless, there exists an opportunity to introduce the concept initially and subsequently tailor it for its intended purpose once the new stakeholder engagement model is more fully developed.

## **Lithuania**

### **Relevance (3/5)**

Considering that cooperation between education institutions and employers in Lithuania is often specific instead of sustained, the country has established the [National Platform for VET Advancement](#). This platform is dedicated to the continuous development of vocational training and the reinforcement of vocational training institutions. Its initiatives

encompass the formulation of proposals for vocational training programs, the enhancement of vocational teachers' training and qualifications, the assessment of competencies, and the promotion of apprenticeships. The platform facilitates collaborative efforts involving businesses, industries, the education community, and government authorities to collectively contribute to the advancement of vocational training.

This platform is composed of a group of experts consisting of social partners, the educational community and public authorities, and by 2022, it has helped the Ministry optimise at least 20% of the current VET network (CEDEFOP, 2022).

In 2011, as a way to encourage Lithuanian VET providers to share their good practices under the topics of qualification of vocational teachers, training methods and tools, foreign language learning in VET, internationalisation of VET, cooperation between VET institutions and creativity in VET, the Qualifications and VET Development Centre launched a good practice competition, attracting 60 participants (European Commission, 2022).

AGROS is a cooperative project involving six European countries, focusing on the Agro-food sector, green skills, and education. Its primary objective is to enhance the expertise of professionals in the sector and foster collaboration between industry and education. The project aims to address skills gaps within this sector and promote awareness of Agro-Food Careers and tools by establishing a dedicated Hub. AGROS is dedicated to the development of innovative training courses and serves as a platform for relevant stakeholders to exchange best practices in this specialised field (CEDEFOP, 2012).

### **Adaptation (1/5)**

Collaboration in Lithuania among VET providers and stakeholders doesn't seem to be a very usual situation, as well as between VET institutions themselves.

As the country is starting to promote collaboration between all parts, it is understandable that no information has been found on the specificities of the VLF Hub.

Although there are efforts to implement some kind of exchange platform, the closest to Result 3 that was found was one developed through a European project. This being said, while the mindset of VET providers and stakeholders does not change regarding

collaboration, but also sustainable development, it might be quite challenging to implement this particular result.

## Luxembourg

### Relevance (3/5)

While Luxembourg may not host a specific "European hub" for food waste prevention and management, its involvement in various European initiatives and networks underscores its commitment to addressing food waste and promoting sustainable food practices in collaboration with partners across the European Union, such as:

- [European Circular Economy Stakeholder Platform \(ECESP\)](#): Estonia could engage with ECESP, an initiative led by the European Commission that brings together stakeholders from across sectors to promote the transition to a circular economy. Within ECESP, Estonia can share insights and collaborate with other European countries on strategies for reducing food waste and promoting circularity in resource management.
- [EU Platform on Food Losses and Food Waste](#): Estonia participates in the EU Platform on Food Losses and Food Waste, which brings together EU member states, industry stakeholders, NGOs, and international organisations to exchange best practices, monitor progress, and develop policies to tackle food waste throughout the food supply chain.
- [European Innovation Partnerships \(EIPs\)](#): Estonia may engage in EIPs related to agriculture, food, and the environment, such as the EIP on Agricultural Productivity and Sustainability or the EIP on Water. These partnerships aim to accelerate innovation and promote sustainable practices, including initiatives focused on reducing food waste and promoting resource efficiency.
- [European Sustainable Development Week \(ESDW\)](#): Estonia participates in ESDW, an annual initiative coordinated by the European Commission to raise awareness and promote actions supporting the UN Sustainable Development Goals (SDGs). Estonia could organise events, campaigns, or initiatives during ESDW to highlight its efforts in food waste prevention, sustainable agriculture, and green transition.
- [European Climate Pact](#): Estonia joins the European Climate Pact, an initiative launched by the European Commission to engage citizens, communities, businesses, and organisations in climate action. Through the Climate Pact, Estonia

can showcase its commitment to reducing greenhouse gas emissions, enhancing energy efficiency, and promoting sustainable consumption practices, including initiatives targeting food waste reduction and environmental conservation (C Knowledge Hub, 2023).

#### **Adaptation (4/5)**

According to the afore-mentioned information, since the support of the government of Luxembourg to greening the education system is of little relevance, it could have been said that the VET LOVES FOOD hub and its e-learning course had little to non relevance for the country, as well. Nevertheless, since both platforms are open resources, these tools can be a fruitful measure for those mentioned private initiatives that have been listed before, since they provide self-training on green practices, especially for the HORECA sector, and they provide an interesting repository of different stakeholders in the fields of HORECA and education at the world and EU level that can serve as the basis for those stakeholders of Luxembourg to promote private measures for greening the country and fostering food waste prevention in a national level.

### **Malta**

#### **Relevance (3/5)**

Malta has been actively engaged in various European Union (EU) initiatives aimed at promoting sustainability, including efforts related to food waste prevention and the green transition. While Malta may not be prominently featured as a hub for these initiatives, it participates in broader EU programs and collaborations targeting environmental sustainability, including in the context of food waste prevention and the green transition (Malta Business Bureau - MBB, 2019). While there may not be a specific designation of Malta as a European hub for food waste prevention and the green transition, the country is likely involved in regional networks, partnerships, and projects focused on these topics within the broader EU context. These collaborations allow Malta to contribute to and benefit from collective efforts aimed at addressing environmental challenges and promoting sustainable development across Europe. Examples of those hubs are (COST - European Cooperation in Science and Technology, 2023):

- [European Green Deal](#): Malta is part of the European Green Deal, which is the EU's flagship initiative aimed at making the EU's economy sustainable. This initiative encompasses various policy areas, including biodiversity, climate

action, and sustainable food systems. Within the European Green Deal, efforts related to food waste prevention and sustainable agriculture are significant.

- [Circular Economy Action Plan](#): Malta participates in the EU's Circular Economy Action Plan, which aims to promote the circular economy model, where resources are used efficiently, products are designed for reuse and recycling, and waste generation is minimised. Initiatives under this plan include measures to reduce food waste and promote sustainable consumption and production practices.
- [EU Platform on Food Losses and Food Waste](#): Malta is involved in the EU Platform on Food Losses and Food Waste, which brings together stakeholders from across the food supply chain to exchange best practices, develop guidelines, and coordinate actions to reduce food waste. This platform facilitates collaboration and knowledge-sharing among EU member states, including Malta, to address food waste at both national and EU levels.
- [Horizon Europe](#): Malta participates in Horizon Europe, the EU's research and innovation funding program. Within Horizon Europe, there are opportunities for collaborative research projects focused on sustainability, including initiatives related to food waste prevention, sustainable agriculture, and the development of innovative solutions for the green transition.
- [European Regional Development Fund \(ERDF\) and Cohesion Policy](#): Malta benefits from funding under the ERDF and Cohesion Policy, which support investments in sustainable infrastructure, green technologies, and initiatives aimed at promoting environmental sustainability. Projects funded through these programs may include measures to reduce food waste, improve resource efficiency, and support the transition to a greener economy.

Besides, regarding European funds, Malta has also taken part of the [LIFE Foster Project](#), a project co-funded by the LIFE programme of the European Union, which was aimed at reducing waste in the restaurant industry.

#### **Adaptation (4/5)**

According to the afore-mentioned information, since the support of the government of Luxembourg to greening the education system is of little relevance, it could have been said that the VET LOVES FOOD hub and its e-learning course had little to non relevance for the country, as well. Nevertheless, since both platforms are open resources, these tools can be a fruitful measure for those mentioned private initiatives that have been listed

before, since they provide self-training on green practices, especially for the HORECA sector, and they provide an interesting repository of different stakeholders in the fields of HORECA and education at the world and EU level that can serve as the basis for those stakeholders of Luxembourg to promote private measures for greening the country and fostering food waste prevention in a national level.

## Netherlands

### Relevance (4/5)

The Netherlands has a well-developed landscape for fostering collaboration with VET providers and various stakeholders. This collaboration is essential to align education with industry needs, ensuring that vocational training programs are relevant and effective in preparing students for the workforce. The Dutch education system is centrally coordinated, providing a structured framework for collaboration between VET providers, schools, and stakeholders. This coordination helps ensure consistency and alignment with national educational and workforce development goals. Some institutions provide online resources and platforms where students can access materials related to sustainable food production, waste reduction, and green skills development. Additionally, various sector-specific collaboration platforms exist to bring together VET providers, employers, industry associations, and other stakeholders. These platforms facilitate communication, collaboration, and the exchange of information to address current and future skill needs.

Also, this collaboration extends to creating innovative learning environments that simulate real-world workplaces. VET providers work closely with stakeholders to develop learning spaces that reflect the current and future needs of industries.

No waste platform: The No Waste Network is a platform initiated by the Ministry of Agriculture, Nature, and Food Quality, directed at entrepreneurs and organisations within the food chain. Its objective is to enhance the value of residual food and diminish food waste. In collaboration with Alliantie Verduurzaming Voedsel, Wageningen UR, and various stakeholders, the initiative disseminates news, inspiration, and research in a compelling manner to subtly promote the reduction of food waste.

### Adaptation (4/5)

The European Hub for food prevention and food waste management stands as a valuable and comprehensive resource that holds the potential for seamless transfer to the national



context of the Netherlands. This transfer would not only supplement but also fortify the ongoing initiatives within the country. The Hub serves as a hub of knowledge, best practices, and collaborative efforts across European nations, making it an attractive model for adoption.

In the Netherlands, where a commitment to sustainability and environmental responsibility is evident, the European Hub can act as a catalyst for furthering the nation's endeavours in the realm of food waste reduction.

The Hub's multifaceted approach, encompassing prevention and management aspects of food waste, mirrors the interconnected challenges associated with this global issue. Transferring such a tool to the Netherlands offers the opportunity to consolidate and streamline the diverse initiatives already in place. It provides a centralised platform for knowledge dissemination, fostering collaboration among stakeholders ranging from government agencies and businesses to educational institutions and non-profit organisations.

Moreover, the European Hub's success in facilitating cross-border collaboration can serve as a model for the Netherlands to enhance its own collaborative networks. The exchange of best practices, success stories, and innovative solutions within the European context can inspire and inform strategies that resonate with the Dutch cultural and economic landscape. The transfer of the Hub to the Netherlands would not only bring in a wealth of knowledge but also potentially spark new ideas and initiatives. It could encourage the Netherlands to contribute its own unique insights to the European network while benefiting from the collective wisdom of other nations facing similar challenges.

In summary, the European Hub for food prevention and food waste management presents itself as a valuable tool ready for transfer to the Netherlands. Its adoption has the potential to reinforce and amplify the nation's ongoing efforts in the realm of food waste reduction, creating a more integrated and impactful approach toward a sustainable and resilient food system.

## Poland

### Relevance (4/5)

Initiatives aimed at nurturing collaboration between Vocational Education and Training (VET) providers and stakeholders in Poland underscore a comprehensive dedication to



synchronising education with the ever-evolving requirements of the labour market. The overarching objective is to facilitate a seamless transition for students from educational institutions to gainful employment.

One prominent manifestation of this commitment is observed in the widespread adoption of apprenticeship programs. These programs serve as a bridge between theoretical learning and practical application by providing students with valuable hands-on experience within authentic work environments. This strategic integration of classroom instruction with real-world exposure addresses the critical need for students to develop practical skills that directly align with the demands of their chosen industries.

The close collaboration between VET providers and businesses in the implementation of apprenticeship programs is pivotal. It serves as a conduit for a direct exchange of insights and expertise between educators and industry professionals. This interaction proves instrumental in tailoring educational curricula to meet the specific needs and evolving trends within various sectors. Additionally, it ensures that students not only grasp theoretical concepts but also acquire the practical skills and knowledge essential for success in their chosen fields.

The significance of this collaboration is underscored by its role in enhancing the overall educational experience, making it more relevant, engaging, and responsive to the intricacies of contemporary workplaces. By fostering such partnerships, Poland endeavours to create a VET landscape that not only imparts academic knowledge but also instils in students the practical proficiency and adaptability required for a successful and seamless transition into the workforce. This collaborative approach is a testament to Poland's commitment to producing a workforce that is well-prepared, industry-ready, and capable of contributing meaningfully to the dynamic demands of the labour market.

The upcoming establishment of 120 Sectoral Skills Centres (SSCs) in Poland is set to create a conducive environment for sustained collaboration between businesses and vocational education across all levels. These centres are poised to play a pivotal role in securing a proficient workforce that meets the demands of the contemporary economy across diverse industrial sectors. The responsibilities of SSCs encompass a spectrum of activities, including innovation, development, education, and training. Through these endeavours, there will be a heightened emphasis on augmenting the transfer of knowledge and the introduction of new technologies into the realm of education.

### **Adaptation (4/5)**

Poland is fully dedicated to cultivating a workforce that is not only well-prepared and industry-ready but also adept at making substantial contributions to the continually evolving demands of the labour market. This commitment seamlessly aligns with the overarching goal of the European Hub, which actively advocates for and facilitates collaboration between VET institutions and various stakeholders. The European Hub serves as a centralised repository as well as a space to share approaches and methodologies to develop green skills and attractive resources to external stakeholders pooling together a wealth of resources to support and enhance the synergies between VET providers and their collaborative partners.

Within this framework, Poland's commitment takes on added significance, as it reflects a proactive stance towards fostering an adaptive and agile workforce. By aligning education with the dynamic needs of industries, Poland ensures that its workforce not only meets but exceeds the expectations of the contemporary labour market. This commitment is not confined to theoretical education; rather, it extends to practical, industry-relevant experiences, reinforcing the idea that students must not only grasp theoretical concepts but also acquire the hands-on skills essential for success in their chosen professions.

The repository of resources offered by the European Hub becomes an invaluable tool, providing a comprehensive and up-to-date collection of materials that aid in the development of effective training programs, curriculum enhancements, and strategies for aligning education with industry requirements.

### **Romania**

#### **Relevance (3/5)**

Initiatives are currently being developed to achieve sustainability goals in Romania, this effort is reflected in the achievement of a very high percentage of these goals.

Some of the information related to the field of sustainability is condensed in official bodies that make it available for articulation (Preda, 2020).

#### **Adaptation (4/5)**

A European HUB for food prevention and food waste management can be a valid tool since there is currently no similar tool in the country and the interest and effort to achieve the sustainable development goals are great.

## Slovakia

### Relevance (3/5)

The waste prevention program 2019-2025 previously mentioned highlights prevention measures in specific areas, such as awareness campaigns, based on the number of implemented information and educational campaigns focused on waste prevention. The objective of this measure is to improve public awareness through information and education campaigns, to be focused on waste prevention. The measure will be implemented in accordance with the departmental concept of environmental education, training and awareness until 2025, through the activities of the national project ‘Improving information and providing advice on improving the quality of the environment in Slovakia’ and other activities. Support information and educational activities to reduce the generation of MSW by educating the public through (European Environmental Agency – EEA, 2021):

- a portal designed to prevent waste,
- good examples from practice from Slovakia and abroad, published on the portal.

Preparation and implementation of the national education programme on the prevention of biodegradable waste and food waste will be targeted to individual groups, namely residents, municipalities and state administration.

FOODRUS project (Horizon 2020) aims to tackle food waste and losses by creating resilient food systems across nine European regions. To achieve this, the project will test 23 circular solutions through diverse forms of collaborative innovation, including: technological (blockchain solutions to manage food losses and waste), social (educational materials and citizen science activities to promote sustainable consumption habits), organisational (last mile networks to foster local consumption and donation), and fiscal (new ‘Pay As You Throw’ schemes). In the framework of FOODRUS, a pilot was organised in Slovakia led by the Slovak Agricultural University in Nitra with the involvement of entities such as FreeFood, TBS and NEDU, specifically focusing on the bread value chain. The pilot has the following objectives: decrease food waste and losses, establish an active network of stakeholders, create a model for prioritising use of edible waste for human consumption and support in the processing phase for the identification of better technologies (FoodRus, 2023).

The 2019-21 Erasmus plus project ‘Improve the efficiency and the attractiveness of environmental engineering and waste management training with game based virtual reality (VR-WAMA)’ is one of the examples focusing on green skills and VET students and teachers. The project aims to develop a training platform containing a game-based 3D Virtual Reality educational environment to assist VET students to better learn and teachers to teach more efficiently in the field of environmental engineering and waste management. The project is coordinated by the University of Nitra (SK).

In the framework of Continuing Professional Development (CPD), the ISEKI-Food Association launched a Foodcareers platform, aimed at bringing together graduates and professionals working in the food sector, both in industry and academia and providing a certification scheme for the recognition of knowledge and skills of professionals working in various fields in the food sector. The platform strives to provide guidance and tools for creating and maintaining a continual professional development portfolio, allowing users to find relevant training courses offered by certified training providers and other CPD activities. Finally, the platform would establish an online network for continual professional training and career development for Food Scientists and Technologists in Europe (Vantuch & Jelínková, 2022).

### **Adaptation (2/5)**

The preparation and implementation of a national education program on the prevention of biodegradable waste and food waste offer a targeted approach for engaging various groups, including residents, municipalities, and state administration: in this sense, the European hub can be exploited complementing it with the national education program. Participation in EU-funded projects of key stakeholders such as the Slovak Agricultural University, such as FOODRUS and VR-WAMA – and similar projects – also demonstrates commitment in addressing food waste from a different point of view. In particular, EU-funded projects can present an opportunity for collaboration, with the European Hub leveraging project’s outcomes and leveraging its training and educational components.

Existing platforms such as the Foodcareers platform aimed at continual professional development in the food sector, aligns with the European Hub’s goals. Reflecting on a potential collaboration with similar platforms can enhance the hub’s reach and impact.

In general, potential collaboration with relevant stakeholders within and beyond EU funded projects can lead to the establishment of a solid network of learners and professionals: this can guide the VET LOVES FOOD European Hub in creating partnerships for contributions and involving diverse entities in its features.

At the same time, Despite the ongoing initiatives, the challenge of insufficient environmental awareness, as mentioned in "Greener Slovakia," persists. The European Hub may need to address this challenge by incorporating awareness-building strategies among its features. Moreover, while there are ongoing projects in environmental education, the integration of waste prevention and sustainable practices into the formal education system may require additional efforts to ensure comprehensive coverage.

In conclusion, while there are strong opportunities for adapting a European Hub for food waste prevention and management in Slovakia, addressing challenges related to awareness, behavioural change, and sustained collaboration is crucial for its successful implementation. In addition to this, complete background information regarding Slovakia's VET system and offer in the agri-food and HORECA sector is missing, thus being difficult to understand the extent to which the HUB can be adapted to the country context.

## Slovenia

### Relevance (4/5)

In the last two decades, Slovenian tourism has experienced substantial growth, resulting in an increased demand for well-trained staff. This demand has become particularly critical in the last two years, leading hospitality service providers to accept individuals willing to work in the kitchen and catering without stringent qualifications. The Umbrella Strategy, endorsed by the Government of the Republic of Slovenia, emphasises the necessity of addressing the challenge of workforce training comprehensively. This includes both formal education and non-formal and informal learning, as well as enhancing the competences and skills of employees. Stakeholders, including those interviewed on the ground, support this holistic approach (United Nations Environmental Programme – UNEP, 2023).

The Umbrella Strategy:

- Inspired by the French model, suggests implementing programs in schools to familiarise students with local cuisine, snacks, and lunches, emphasising the teaching about local foodstuffs, protected foods and wines, to raise awareness among young people.
- Strives to improve awareness among providers about using local, seasonal resources and promoting Slovenia as a country connected to nature. The emphasis is on foraging, cheeses, dairy products, various meats and unique Slovenian products.

Strategy for the implementation of the school scheme in Slovenia for the period of six school years from 2023/2024 to 2028/2029: it is one of the measures to improve children's eating habits and is part of the Resolution on the National Program on Nutrition and Physical Activity for Health 2015-2025, to be implemented

In the period of six school years from 2023/2024 to 2028/2029. The purpose of the school scheme measure is to create a support mechanism to primarily help ensuring a balanced diet for children and adolescents, adequate daily intake of fruit, vegetables and milk and milk products in children and adolescents etc., in connection with agriculture, healthy eating habits, local food chains, organic farming, sustainable production and prevention of food waste and, consequently, nature conservation informing students and teachers about the processes of food production and processing, especially fruit and vegetables and milk and milk products. In the school scheme, pupils in primary schools and children and young people in institutions for the upbringing and education of children and young people with special needs (pupils) are given an additional portion of fruit and vegetables or milk and milk products free of charge, and they are given them through various accompanying educational activities measures are linked to agriculture, educates about healthy eating habits, local food chains, organic farming, sustainable production and prevention of food waste. The school scheme also includes monitoring and evaluation of the effects of the scheme and informing the public (EU Food Loss and Waste Prevention Hub, 2023).

The topic of food waste is part of educational activities carried out in kindergartens and schools (e.g. in the context of the 'Traditional Slovenian Breakfast' project; the 'School Fruit, Vegetables and Milk' scheme, the 'Europe in School' competition that dedicated its 2020 edition to food waste, etc.). As part of the 6-year strategy of the school scheme

(2017-2023), centres for school and extracurricular activities may carry out projects on food waste prevention (I feel Slovenia, 2023).

The DIH AGRIFOOD, or Digital Innovation Hub for Agriculture and Food, operates as a comprehensive "One-Stop-Shop" offering digital transformation services to a diverse range of organisations. These organisations include farmers, farmer associations, food producers, actors within the food supply chain, and solution providers. What sets DIH AGRIFOOD apart is its commitment to a Multi-Actor Approach (MAA), emphasising collaboration and engagement from various stakeholders involved in the agriculture and food industry. The primary goal of DIH AGRIFOOD is to facilitate the digital transformation of these organisations, ensuring that they can provide safe, sustainable, and high-quality food. The approach adopted by DIH AGRIFOOD extends beyond traditional technological advancements, incorporating considerations for economic, environmental, and social aspects throughout the entire food production and delivery process. In essence, DIH AGRIFOOD serves as a centralised hub where digital innovation converges with the broader goals of promoting food safety, sustainability, and quality while balancing the economic, environmental, and social dimensions of the agriculture and food sector. The "One-Stop-Shop" concept underscores the hub's role as a comprehensive resource for digital solutions and collaborative efforts in advancing the agriculture and food industry.

#### **Adaptation (4/5)**

The strategies outlined in the implementation of the school scheme in Slovenia, particularly focusing on improving children's eating habits and incorporating elements related to healthy eating, local food chains, sustainable production, and prevention of food waste, share common objectives with the VET LOVES FOOD project. Both initiatives aim to promote sustainable practices and education, fostering awareness about food consumption and waste prevention.

The communication channel, space for sharing approaches and methodologies, interdisciplinary learning space, and repository of materials proposed in the VET LOVES FOOD project align well with the principles embedded in the Slovenian school scheme. Both emphasise collaboration and knowledge exchange among stakeholders, provide resources for skill development, and encourage the adoption of sustainable habits, including food waste prevention.



Adapting elements from the Slovenian school scheme to the VETLOVESFOOD project is feasible and within capabilities and could enhance the VET community's efforts in green skills development and food waste prevention. The shared emphasis on education, healthy habits, and sustainability provides a solid foundation for collaboration and mutual learning between the school system and vocational education and training initiatives. By leveraging successful strategies and materials from the school scheme, VET LOVES FOOD could further enrich its approach and contribute to a more comprehensive and integrated educational framework.

## Sweden

### Relevance (3/5)

The relevance of this result in Sweden is provided through the following examples:

#### Karma - Food Waste HUB

Karma is fighting food waste by using an app that links restaurants, cafes, and stores with people who want to buy leftover food at a discounted price. This helps businesses reduce waste and find new customers while users get to enjoy good food at a lower cost—it's a win-win! Karma is growing fast, and we're always on the lookout for new team members. Each year, a third of all food produced is thrown away, resulting in a massive 1.3 billion tons of global waste. Karma's app makes it simple; it connects places selling food with users who want to buy the surplus at a lower price (KARMA, 2015).

#### Swedish Food Agency

The Swedish Food Agency's job is to ensure that the food consumed in Sweden is safe and truthful. They want it to be easy for people to eat healthily and sustainably, and they work to ensure a secure supply of food and drinking water every day and during emergencies. They use knowledge, advice, rules, and control as their tools. For the benefit of consumers, they aim for safe food and drinking water, clear information about food, and sustainable food choices. Sustainability, for them, means producing food and water that is good for people, animals, and the environment, both now and in the future. They want everyone in Sweden to eat in a way that prevents illness and promotes equal health (Livsmedelsverket, 2024).

### Adaptation (4/5)



Sweden's model, exemplified by Karma and the Swedish Food Agency, offers a compelling template for global adoption. Karma's app-driven approach to reducing food waste by connecting businesses with cost-conscious consumers demonstrates an efficient and scalable solution that can be replicated internationally. Simultaneously, the Swedish Food Agency's commitment to ensuring safe, truthful, and sustainable food aligns with global health and environmental goals, providing a comprehensive framework adaptable to diverse contexts. The success of these initiatives stems from their practicality and universality, making Sweden's model not only replicable but also highly relevant on a global scale.

## **RESULT 4 – THE VET LOVES FOOD REPLICATION PATH**

The VET LOVES FOOD Replication Path must be considered as the final phase of research and adaptation of the VET LOVES FOOD training model to ensure its replicability and application in other European countries, with related guidelines for external stakeholders, VET centres and VET Authorities.

The VET LOVES FOOD Replication Path can featured as a) recommendations addressed to VET centres on how to the VET LOVES MODEL, following the main areas addressed previously, being: energy consumption, waste disposal, food culture and ethics, how to manage a restaurant from a more sustainable approach, and sustainable diets; b) a support document for the creation of national/regional guidelines and toolkits foreseen to implement a sustainable model in the fight against food waste for VET and stakeholders based on the specific needs of the country/region.

### **Austria**

#### **Relevance (5/5)**

Food waste generation

In Austria, an estimated 640,000 tons of avoidable food waste (excluding food waste from agriculture and treatment and processing) is generated every year, with the largest share occurring in households, followed by restaurants and food services. This corresponds to around 71 kg/person/year (Zero Waste Austria, 2020).

Considerable quantities of opened and originally packaged food (= avoidable food waste) are disposed of in households. Common reasons are a lack of planning of purchases and meals (unplanned luxury purchases), incorrect storage of food, lack of knowledge about

how to extend the shelf life (e.g. preservation). The best-before date is often wrongly associated with the fact that a food is inedible after this period. But also XXL packs and the increase in the range of out-of-home consumption (especially the to-go range and delivery services) are often a reason for increased discarded quantities (European Environment Association - EEA, 2023).

#### Measures to prevent food waste in Austria

Numerous activities to combat food waste have been launched at national level in recent years. With the initiative "Food is precious!" of the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, which has existed since 2013 in close cooperation with the economy, the federal states, the municipalities, municipal waste management associations, employees, consumers and social institutions. The aim is the sustainable avoidance and reduction of food waste throughout Austria. So far, around 100 organisations/businesses from various sectors have been secured as cooperation partners, who for their part are consistently taking action against food waste.

Besides the initiative "Food is precious!" numerous activities have been carried out to this date such as the voluntary agreement to avoid food waste in food companies<sup>3</sup>, the introduction of the "Tafelbox" or the "GenussBox" at events in the hospitality and catering sector, the establishment of an online platform for food sharing, the development and implementation of the platform "United Against Waste" or the guideline on donations of food waste to social institutions. Full details on the Food is Precious programme can be found in WPP 2023.

Prevention of food waste is one of the main action areas of the Austrian waste prevention programme, which specifies the objectives and associated measures to prevent food waste for the next few years.

In June 2021, the Federal Government decided to establish a Governance Board of the responsible ministries for the prevention of food waste. The board will propose a national strategy and an action plan with the involvement of key stakeholders.

The national action programme "Lebensmittel sind kostbar!" ('Food is Precious') was launched in 2012, in close cooperation with key players. It is the main strategy against food waste, describing measures in this area, in order to support partners to reduce food waste along the entire food value chain. The measures foreseen in the action programme

are in line with the food use hierarchy, prioritising human use over animal feed and the reprocessing into non-food products as part of measures taken to prevent waste generation. An updated action programme is currently underway.

Actions taken under this initiative include:

Stakeholder dialogues on networking between the various sectors;

Information and awareness campaigns, eg. meaning of best before date;

Supporting the redistribution of food to social institutions and building the first online private-sector exchange platform for food in Austria;

Organisation of the ‘VIKTUALIA’ awards – the first Austrian anti-food-waste prize to present positive examples of such actions. The prize has been awarded since 2012;

Other examples of platforms for information or enhancing awareness are:

The platform ‘United Against Waste’ for the prevention of food waste in catering, hotels and community catering, which is supported by a broad network of partners with the common goal of halving avoidable food waste from outside home catering in Austria, by 2030.

the Association of Austrian Food Banks (Verband der österreichischen Tafeln) in collaboration with major food retailers, have founded an on-line platform to donate food that cannot be sold from supermarkets to social organisations across the country. There is a voluntary agreement with food businesses that encourages the redistribution of food for social purposes, signed by the large retail companies in Austria.

Austria’s Communication Network with Waste Consultants established in 1997, gathering approximately 400 waste consultants, raises awareness on waste management at regional and municipal levels, including on food waste. The network carries out awareness raising activities on food waste prevention through printed materials, advertisements and editorials in printed and social media

In the context of the International Day of Awareness of Food Loss and Waste, Austria celebrates the action days Nix übrig für Verschwendung (‘Nothing left to waste’ action days), in which a number of stakeholders from the food services sector participates.

Various teaching materials were prepared and technical lectures were held in both public and private schools, for pupils as well as for teaching staff. The Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology takes part in the annual fair for teaching staff Interpädagogica and organises the school competition Abfallvermeidung macht Schule ('Waste avoidance in schools').

At regional level, an example of a project against food waste is the 'Genuss Box', carried out by the Land Vorarlberg and food services in Vorarlberg, a user-friendly box that allows consumers to take home leftover food from restaurants, canteen kitchens and events.

Other research and innovation activities, partly supported by national or regional organisations like the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, are several EU funded projects, like, i.e. INTERREG projects STREFOWA and CEWA (EU Food Loss and Waste Prevention Hub, 2023).

### **Adaptation (5/5)**

In addition to all the strategy and initiatives outlined by the Austrian Government, also the initiative Climate Friendly hotel cuisine is an interesting initiative to create potential links and to produce recommendations for the VET system.

These recommendations should be able to address the gap between theory and practice, allowing VET students in the HORECA sector to be able to "play" and "explore" the real context of food waste management, with dedicated sessions and recipes, better if in a traditional cuisine context.

## **Bulgaria**

### **Relevance (4/5)**

After exhaustive research, it can be concluded that in Bulgaria there is no existence of any set of recommendations addressed to education centres on the implementation of a green driven food waste prevention model. In this regard, there is an evident lack of sources on the matter. In terms of food waste prevention, according to the European Union, in Bulgaria there is data on the generation of food waste by sectors that are measured according to the EU methodology for food waste adopted in 2019. However, they are not yet available (European Environmental Agency - EEA, 2023).

## **Adaptation (0/5)**

On a first sight, it could be stated that the VET LOVES FOOD Replication Path is a necessary tool to fill in the gaps observed regarding the green driven food waste prevention practices in Bulgaria. It has been observed that there is a blatant need for green driven food waste prevention practices in the education field, and specifically, in VET. However, since there is no background on the matter, it is impossible to implement this resource.

## **Croatia**

### **Relevance (5/5)**

The entrepreneurial world and the government work together in Croatia for the common objective of preventing and reducing food waste prevention.

One of the measures of the newly adopted Plan for prevention and reduction of food waste generation in Croatia 2023-2028, is the national strategy “Together against Food Waste”.

The agreement was signed in February 2023 by the Ministry of Agriculture and representatives of food producers and processors, trade, hospitality, the scientific and academic community, local and regional self-government units, non-profit organisations and initiatives, as well as associations and companies. The agreement currently has 33 signatories, and during its duration of five years, it is available for accession by new signatories

With their signature, the signatories voluntarily undertake to invest efforts in reducing food waste in their business processes, to donate food, but also to actively communicate with consumers. In this way, the Agreement includes a complete chain of activities, from food production and processing to households (Dobri dom, 2024).

In Croatia, more than 286,000 tons of food are thrown away annually, and even though we are among the EU countries with the smallest amount of food waste per capita, we continue to make further strides by implementing the measures and activities contained in the new Plan for the prevention and reduction of food waste until 2028 (One Planet, 2024).

The Croatian Food Agency (HAH) is responsible for pointing at new strategies for the future of the food waste management

Organisation and *modus operandi* for this national legal entity are regulated by the Food Act (OG 81/13, 14/14, 30/15), the Statute of Croatian Food Agency and other legal acts of the Croatian Food Agency. The founder of the Croatian Food Agency is the Government of the Republic of Croatia. HAH was established by the Food Act from 2003, and officially started with its work in January 2005. It is located in Osijek. Director is the legal representative of HAH and is responsible for all operational and legal matters. HAH is funded by the state budget of the Republic of Croatia.

HAH performs scientific and technical tasks in the field of food and feed safety and is national referent point for risk assessment in food and feed safety area. In performing its duties HAH is guided by principles of independence, transparency and confidentiality (Croatian Food Agency - HAH, 2024).

### **Adaptation (3/5)**

We believe that one of the main objectives of the R4 Replication pathway of the VLF project is to make the measures, tools and training developed during the project activities sustainable.

The Croatian national strategies, shared both among stakeholders and with the business community, can be the first step to share the project objectives and make them evident to the signatories and actors involved.

Thanks to national agreement, the measures implemented by the VET LOVES FOOD Project, will be visible to stakeholders and actors, which are normally not involved in European Projects, thus enhancing the impact of the project itself.

## **Cyprus**

### **Relevance (4/5)**

The recommendations tailored for VET centres, outlining strategies for the integration of eco-friendly food practices, and the accompanying national and regional guidelines and toolkits intended for the implementation of a sustainable model to combat food waste within the VET sector and among stakeholders, are integral components of a comprehensive food waste management policy.

This policy is seamlessly embedded within the broader context of the national waste management strategy, which, in turn, is systematically rolled out through a seven-year

programming initiative encompassing both national and municipal waste management strategies.

Within the overarching framework of this national waste management strategy, specific attention is dedicated to addressing the multifaceted challenges posed by food waste. The detailed recommendations for VET centres serve as practical guidelines for the effective incorporation of green-driven food practices, ensuring that sustainability principles are woven into the fabric of vocational education and training in the culinary domain.

Moreover, the national and regional guidelines, coupled with the toolkits, form an essential toolkit for stakeholders involved in the fight against food waste. These resources provide a structured approach, aligning with broader national objectives, and offer actionable steps for the implementation of sustainable models. This ensures a cohesive and coordinated effort among VET centres and other stakeholders, fostering a collective commitment to mitigating the impacts of food waste on both environmental and economic fronts.

The inclusion of these measures in a seven-year programming strategy underscores the long-term commitment of the national government and municipal bodies to create a resilient and sustainable waste management ecosystem. By integrating food waste management into this strategic framework, the aim is to not only reduce environmental impact but also to foster a culture of responsibility and sustainability within the VET sector and among various stakeholders involved in food-related practices. In essence, these initiatives reflect a forward-thinking approach that aligns with broader national objectives for sustainable waste management.

in addition to the national food waste management policy there is another project initiative aimed at disseminating recommendations to HORECA stakeholders:

Sincerely Food, Cyprus, is an eight-month long, bi-communal project which is EU-funded under ‘Global learning approach on food waste in non-formal education’ (Project No. CSO-LA/2017/388- 342). It aims to utilise the engaging material developed by ‘Sincerely, Food’, adapt it to the Cypriot reality, disseminate it and raise awareness about food waste to as wide an audience as possible (AKTI, 2023).

#### **Adaptation (4/5)**

The national strategy adopted by Cyprus, is very detailed and full of commendable initiatives aimed at reducing and managing food waste.

The possibility of integrating these recommendations into the broader document foreseen by Project Outcome 4, can certainly represent an added value, both for the national professional groups in Cyprus (who could benefit from further stimuli and resources), and for the new information that would enrich the content of the project itself.

## Czech Republic

### Relevance (3/5)

Many of the projects mentioned offer resources and training for teachers to integrate food waste prevention strategies into their curricula. VET LOVES FOOD can collaborate with VET centres to design agro-food curricula that incorporate modules specifically focused on food waste reduction, covering topics such as menu planning, portion control, food storage, and creative reuse of leftovers.

Initiatives like the Střední průmyslová škola potravinářská Třebíč demonstrate the effectiveness of hands-on learning in implementing sustainable practices. VET LOVES FOOD's Hands-on manual can help to prevent food waste, providing practical guidance and activities for students to engage in food waste reduction efforts. Through connecting with the Czech National Network for Support of VET in Agriculture and Food Industry, VET LOVES FOOD can facilitate collaboration between VET providers, businesses, and experts on food waste reduction strategies. VET LOVES FOOD can also encourage dialogue and collaboration among stakeholders to develop tailored solutions that address the specific needs of the region (CEDEFOP. 2023; Rethink, Reduce, Reuse - VET LOVES FOOD, 2022).

### Adaptation (4/5)

In line with the objectives of VET LOVES FOOD, the recommendations for VET centres could include:

- Integrating food waste prevention modules into existing agro-food curricula.
- Providing hands-on learning opportunities through practical activities and initiatives within the school environment.
- Facilitating knowledge sharing and collaboration among stakeholders, including educators, businesses, and experts.



- Engaging with the broader community to raise awareness and promote a culture of food waste prevention.
- Adapting and readapting strategies to suit the specific context and needs of the Czech Republic.

Moreover, national/regional guidelines and toolkits can be developed based on the specific needs of the country/region, providing VET centres and stakeholders with practical resources and guidance to implement sustainable models in the fight against food waste. These guidelines and toolkits can offer step-by-step instructions, case studies, and best practices tailored to the local context, enhancing the effectiveness and impact of food waste prevention efforts in VET settings.

## Denmark

### Relevance (5/5)

As it has been largely demonstrated along the present document, the commitment of Denmark towards tracing a path of sustainability and food waste prevention is observable. If the concepts of sustainability and food waste prevention and management were split, one must say that, recently, the country has made tangible efforts to provide the VET education system in the agro-food field with guidelines, tools, and knowledge to become more sustainable. Even so, there is still one piece of the puzzle missing: VET degrees in the HORECA sector.

In regard to the food waste problem, this concern is hardly addressed in VET education as a concept with its own entity. Food waste is not even included in the VET curricula of the degrees related to the HORECA. And, even so, there is a lack of educational tools and measures for teachers and students of degrees in the HORECA sector on how to approach the problem of food waste on a daily basis.

In this regard, the problem here does not strive in that there are no tools within VET education in order to implement sustainable models. The problem here is that the focus on sustainability does not give enough consideration to the problem of food waste and, on another hand, that the approach on how to green VET education only covers certain steps of the supply chain, giving less attention to the one in which most of the food waste is produced.

## **Adaptation (4/5)**

Applying the information gathered under the frame of the VET LOVES FOOD Result 4 can be crucial for Estonia to put VET education in the HORECA sector first, giving to the education of the chefs-to-be the proper relevance. The Estonian government must understand that food waste is not a problem of politics, but also an issue to be tackled through education, especially through education sectors which are dedicated to training in the HORECA field.

Therefore, the Result 4 of the VET LOVES FOOD Project can be of truthful use for Estonia in order to understand the cross-cutting cleavages within the HORECA sector in the topics of sustainability and food waste prevention and management. Therefore, it can help understanding two key aspects: how sustainability and food waste prevention are being addressed by each EU member in order to check if there is a need to balance the own internal policies in this regard; and, more important, it can be of help to create a rationale on how to start implementing measures to insert tailor-,made lessons in the VET degrees related to the HORECA sector related to sustainability and food waste prevention and management taking the EU standards as a reference model or framework.

## **Estonia**

### **Relevance (4/5)**

The Estonian case is quite related to Denmark's one. The commitment of Denmark towards tracing a path of sustainability and food waste prevention is observable. If the concepts of sustainability and food waste prevention and management were split, one must say that, recently, the country has made tangible efforts to provide the VET education system in the agro-food field with guidelines, tools, and knowledge to become more sustainable. Even so, there is still one piece of the puzzle missing: VET degrees in the HORECA sector. As afore-mentioned in the analysis of the result 1, Estonian's efforts in greening the VET sector seem to be more oriented towards facilitating infrastructure and resources to climate change prevention and green transition. Therefore, the HORECA sector has little to no relevance when greening the Estonian VET education system.

In regard to the food waste problem, this concern is hardly addressed in VET education as a concept with its own entity. Food waste is included in the VET curricula of the degrees related to the HORECA sector as one point within the greening wave of the education sector. And, even so, there is a lack of educational tools and measures for

teachers and students of degrees in the HORECA sector on how to approach the problem of food waste on a daily basis.

In this regard, the problem here does not arise in that there are no tools within VET education in order to implement sustainable models. The problem here is that the focus on sustainability does not give enough consideration to the problem of food waste and, on another hand, that the approach on how to green VET education only covers certain steps of the supply chain, giving less attention to the one in which most of the food waste is produced.

### **Adaptation (0/5)**

The adaptability of the VET LOVES FOOD Replication Path is not possible in Estonia due to the lack of interest in greening the education sector from the agri-food and hospitality perspectives.

## **Finland**

### **Relevance (4/5)**

Various initiatives and resources in Finland are aimed at promoting sustainable food practices and food waste prevention within the VET sector. Key areas addressed include energy consumption, waste disposal, food culture and ethics, sustainable restaurant management, and sustainable diets. Projects such as "Green Chefs Finland" by Evira and the "Gastronomy & Climate Change" course offered by HAMK University of Applied Sciences highlight efforts to educate professionals in reducing food waste and adopting sustainable practices. Additionally, platforms like "Foodpairing.com" offer innovative solutions for chefs to minimise waste through creative ingredient pairing. These initiatives demonstrate Finland's commitment to sustainability within the food sector and provide valuable insights for replication in other European contexts. The emphasis on collaboration between stakeholders and the availability of educational resources highlight a concerted effort towards fostering sustainability in the Finnish food industry (Typpö, 2023; GulaSana, 2023).

Several examples from the data illustrate practical approaches to implementing green-driven food waste prevention models similar to those envisioned by the "VET LOVES FOOD" project. Initiatives like the "Kouluruokailun opas" (School Meals Guide) published by the Ministry of Agriculture and Forestry provide concrete strategies for

sustainable school meals, including portion control and menu planning to minimise food waste. Additionally, projects like the "Gastronomy & Climate Change" course offered by HAMK University of Applied Sciences equip students with skills to mitigate the environmental impact of food production and consumption, addressing both energy consumption and sustainable diets (HAMK - Häme University of Applied Sciences, 2023; YLE, 2023).

#### **Adaptation (4/5)**

Drawing from the existing initiatives in Finland, the VET LOVES FOOD Project can be strategically replicated by leveraging complementary resources and guidelines already in place. For instance, the comprehensive guidelines provided by Finland's National Curriculum Guidelines emphasise education for sustainable development across all subjects, providing a framework for integrating green skills into VET curricula. Similarly, the Erasmus+ VET LOVES FOOD Project's focus on developing a curriculum module for food waste prevention in the hospitality sector aligns with Finland's emphasis on practical vocational training. By collaborating with stakeholders like the Ministry of Agriculture and Forestry and educational institutions offering programs like the "Green Gastronomy" program at Haaga-Helia University of Applied Sciences, VET centres can effectively implement green-driven food waste prevention models tailored to the Finnish context. Additionally, initiatives promoting sustainable restaurant management, such as the "Circular Economy in Restaurants" training launched by Sitra, offer valuable insights into sustainable practices that can be integrated into VET programs. Overall, by leveraging existing resources and fostering collaboration between stakeholders, Finland can successfully replicate and adapt the "VET LOVES FOOD" project to advance sustainability in its agro-food sector and VET education.

### **France**

#### **Relevance (3/5)**

As mentioned earlier, France is at the forefront of addressing the issue of food waste, supporting an ongoing collaboration among policymakers, educational institutions, companies, and various other pertinent stakeholders. This concerted effort reflects a comprehensive approach aimed at not only raising awareness about the implications of food waste but also implementing practical strategies to reduce it across different sectors. The collaborative initiatives involve a dynamic exchange of ideas and expertise between

policymakers who shape regulations and frameworks, educational institutions that play a vital role in training the next generation on sustainable practices, companies that implement innovative solutions, and other stakeholders who contribute diverse perspectives to the cause.

This collaborative model emphasises the importance of a unified front, where each sector plays a unique yet interconnected role in combating food waste. Policies are crafted with insights from industry needs and educational perspectives, while businesses, in turn, contribute to shaping policies through their experiences and challenges. Furthermore, ongoing dialogues between stakeholders facilitate the identification of evolving trends and the development of adaptive strategies to stay ahead of the curve in the fight against food waste.

This collaborative approach extends beyond mere cooperation and establishes a shared responsibility among all stakeholders to actively participate in reducing food waste. It fosters an environment where knowledge is exchanged, best practices are shared, and a collective commitment to sustainable practices is nurtured.

By placing collaboration at the forefront, France's endeavours in combating food waste are not only comprehensive but also forward-thinking. The synergy between policymakers, educators, businesses, and other stakeholders reflects a holistic understanding of the multifaceted nature of the issue and the recognition that meaningful and lasting change requires a collective and sustained effort from all quarters.

Examples:

- National Pact to Combat Food Waste;
- law established in 2016;
- anti-waste law for a circular economy;
- National Waste Prevention Program for 2014-2020;
- Guide: How will AI transform the hospitality industry?

#### **Adaptation (4/5)**

In light of France's commendable efforts to reduce food waste, the replicable model of VET LOVES FOOD presents a compelling opportunity for transfer and adaptation within the national context. This model not only holds the potential to fortify existing practices but also offers a means to amplify their efficacy. The process of transferring and adapting

this model serves as a catalyst, propelling and intensifying the ongoing momentum toward reducing food waste in the country. Importantly, the focus on the VET educational system ensures a targeted and impactful contribution to this overarching goal, fostering a culture of sustainability within vocational education and training.

## Germany

### Relevance (3/5)

We have found initiatives that are very close to those proposed by the project, but there are no initiatives that comprehensively address the prevention of food waste.

There is a need and willingness to address this challenge, but no concrete models to address it (European Environmental Agency - EEA, 2023).

### Adaptation (4/5)

There is a magnificent basis for landing the VET LOVES FOOD model, this model may be able to contribute to consolidating actions and achieving established objectives to reduce food waste through training.

## Greece

### Relevance (3/5)

There are recommendations to promote sustainability in training institutions in Greece based on the proposal of the European Commission through the Council Recommendation on learning for environmental sustainability. This proposal is part of the new European framework of competences in the field of sustainability.

Some of the key recommendations are:

- Education and training on climate change, biodiversity and sustainability.
- Acquisition of knowledge on environmental sustainability.
- Priority should be given to the acquisition of this knowledge in education and training policies and programmes.
- Sustainability approaches in educational institutions.
- Active participation of students and staff.
- Investment in sustainable and ecological infrastructure, training, tools and resources.

These recommendations are intended to help training centres to be more resilient and ready for the ecological transition, in the case of Greece it would be in the initial stages of development of these actions, they are proposed, but they are neither defined nor developed.

#### **Adaptation (4/5)**

In the case of Greece, VET LOVES FOOD Replication Path is a highly recommended tool for the expected development in the field of sustainability within vocational training and the food sector.

### **Hungary**

#### **Relevance (3/5)**

The cited projects in Hungary showcase a variety of approaches to address food waste prevention and promote sustainable practices within the hospitality sector. Each project targets different aspects of the issue, including educational initiatives, stakeholder engagement, and community-driven solutions. While none of the projects directly mirror the VET LOVES FOOD model, they offer valuable insights and resources that can be adapted to align with the objectives of the VET LOVES FOOD project.

The National Food Waste Prevention Action Plan stands out for its comprehensive approach, providing guidelines and educational materials specifically tailored for VET institutions in the hospitality sector. Similarly, Project 2, Élelmiszermentés.hu, focuses on educational programs and workshops for food businesses, offering practical strategies for food waste prevention. Additionally, Project 3, Zöldségkosár Közösség, promotes local and seasonal food production, indirectly contributing to sustainability efforts within the food industry (National Employment Public Foundation, 2010).

#### **Adaptation (4/5)**

In terms of potential interaction with VET LOVES FOOD, the cited projects offer valuable resources and strategies that can be incorporated into similar initiatives. For instance, the guidelines and educational materials developed by the National Food Waste Prevention Action Plan can serve as a foundation for VET centres looking to implement green-driven food waste prevention models. Similarly, the workshops and educational materials offered by Élelmiszermentés.hu provide practical insights into managing a restaurant from a more sustainable approach, aligning with the objectives of VET LOVES

FOOD to develop green skills in agro-food curricula. By leveraging the experiences and resources of these projects, VET LOVES FOOD can tailor its approach to address the specific needs and challenges of the Hungary's education system and hospitality sector.

## Ireland

### Relevance (4/5)

In Ireland, the approach to sustainability and food waste reduction is often integrated into broader national initiatives and guidelines related to environmental practices and education for sustainable development.

At a national level, there is the [Sustainability Toolkit for Schools](#), which supports schools in adopting a Sustainability Policy Statement, consisting of a Sustainability Self-assessment tool, Sustainability guidelines, and a Sustainability Policy Statement template. There is also a [National Forum on Education for Sustainable Development](#), held on an annual basis, promoting a platform for discussion and reflection among stakeholders, facilitating networking and sharing of ideas.

The [National Waste Prevention Program](#) addresses waste prevention across various sectors, including education, and focuses on minimising the consumption of resources and energy by keeping products and materials in use for longer.

[Waste Action Plan for a Circular Economy 2020-2025](#) is committed to engaging with a variety of “stakeholders to develop a Food Waste Prevention Roadmap that sets out a series of actions to deliver the reductions necessary to halve our food waste by 2030, meet any other related targets, and promote our transition to a circular economy”.

What we can perceive from the previous research is that even though there are relevant guidelines, toolkits, and roadmaps, they are not specific to VET centres, or those who focus, are oriented to other aspects of sustainability, and do not encompass food waste prevention (Government of Ireland, 2023).

### Adaptation (5/5)

In Ireland, the promotion of sustainability within VET centres is a multifaceted effort, encompassing collaboration with diverse stakeholders and a commitment to fostering environmentally conscious practices. While specific information directed at food waste prevention within VET centres may be limited, the overarching focus on sustainability is evident at both national and local levels.



This being said, since specific recommendations for food waste prevention may be evolving, and the commitment to sustainability is already widespread, there seems to be space for the implementation of this result, bringing Ireland's sustainability policy a step closer to achieve its goals on food waste reduction.

## Latvia

### Relevance (3/5)

The [EU Life financed project Waste to Resources Latvia](#) - boosting regional sustainability and circularity (2018-2028), coordinated by the Ministry of Environmental Protection and Regional Development involves many public services (Ministry of Environmental Protection and Regional Development Republic of Latvia, 2022), along with private entities, and also counts with the participation of Riga Technical University. It aims to implement the National Waste Management Plan of Latvia (2021 – 2028) that intends to reduce waste generation by promoting measures that support circularity, and ultimately facilitates climate neutrality (European Environmental Agency - EEA, 2023).

The Food Waste Management Plan included in the National Waste Management Plan of Latvia focus mainly on facilitating food donations, awareness-raising initiatives, and research and development support for zero waste actions and technologies.

### Adaptation (3/5)

Although Latvia shows already concerns about food waste generation, the actions and plans that aim to tackle the issue are directed to the overall population, and no guidelines directed to schools were found during the research.

Since there are no orientations for education providers in the country, the implementation of the VLF resources could be made by engaging with schools that work with on-site gardens as pilot sites to implement curriculum and hands-on manual, allowing for other schools to realise the potential of the resources applied. It might also be valuable to promote work with partners like Liepāja Technical School who already teach sustainable supply chains to refine the curriculum, as well as utilising school partnerships with food suppliers to test approaches from the training manual.

## Lithuania

### Relevance (3/5)

Lithuanian National Waste Prevention and Management Plan (2021 – 2027) has as one of its main goals to reduce the generation of food waste “in primary production, in processing and manufacturing, in retail and other distribution of food, in restaurants and food services as well as in household” (European Environmental Agency - EEA, 2023). The mention made for schools focus on funding initiatives that allow the development of sustainable food consumption through the promotion of buffet-based catering.

### **Adaptation (2/5)**

Lithuania is on a path towards a more sustainable approach on food consumption, mainly due to European legislation. In this sense, it seems prudent to invest in initiatives that focus on educating the general population about the topic so that they are willing to adopt new models like the one presented by the VLF.

Nevertheless, some openings are already showing, and some materials show some potential, mainly as awareness-raising resources. As a whole, there might be some resistance in adopting the VLF tools.

## **Luxembourg**

### **Relevance**

According to the previous research, it is important to remark that the activities developed at a national level to green the education system of Luxembourg and to tackle food waste in the country are almost nonexistent or of little relevance. There are not many sources to be found (for external researchers) which lead to think that Luxembourg, in a national context, has hopped on the wave of the green revolution that Europe as a whole has been experiencing for quite some decades. It is true that the country counts on the support of external stakeholders to promote green education and food waste prevention. Nevertheless, if the country wanted to develop a national strategy on food waste prevention, for instance, there would not be a basis where to start building.

On the other hand, it is true that, even if the national strategies are not of much relevance for the greening of the country, at a European level, Luxembourg is part of many hubs that promotes the green transition holistically. Therefore, one could say that there is some sort of breeding ground for the further creation of policies regarding the afore-mentioned issues. Nevertheless, it does not seem that any development is going to happen in the short run in this regard.

## **Adaptation**

Therefore, after all the previous information, it has been considered that, in the case of Luxembourg, the VET LOVES FOOD Replication Path could be the most relevant of the Project's resources for the country. It has been made clear that the country is lacking a basis from which to start building green national policies, including food waste prevention as an issue to pay attention to. In this regard, implementing the VET LOVES FOOD Replication Path could be vital for the country, since it can serve as a very relevant guideline for the country, establishing a roadmap of the most important trends and practices to greening education, especially VET education, in Europe. As well, it establishes relevant insights on how to perform food waste prevention from a multilateral perspective, with a clear focus on the HORECA sector, though. Besides, the Replication Path offers a huge networking repository with many hubs in which the rest of the countries take part or are associated with. In the end, it is clear that, for starters, Luxembourg needs to define clear strategies on how to green the country itself, before narrowing down the topic to education. That is the reason why the fourth result of the VET LOVES FOOD Project is key for the country to start sorting out the basis of the future strategies to be implemented in regard with greening the education sector and food waste prevention.

## **Malta**

### **Relevance (4/5)**

According to the previous research, it is important to remark that the activities developed at a national level to green the education system of Malta and to tackle food waste in the country are almost nonexistent or of little relevance. This situation is related to the country context addressed previously. Malta is a small developing country, with serious socio-economic issues underneath. Therefore, even if the VET LOVES FOOD Replication Path would be on the most important resources for the development of Education Sustainable Development education in Malta's VET system, it would be probably impossible to accomplish in the short run. Nevertheless, if the country wanted to develop a national strategy on food waste prevention, for instance, there would not be a basis where to start building.

On the other hand, it is true that, even if the national strategies are not of much relevance for the greening of the country, at a European level, Malta is part of many hubs that promotes the green transition holistically. Therefore, one could say that there is some sort

of breeding ground for the further creation of policies regarding the afore-mentioned issues. Nevertheless, it does not seem that any development is going to happen in the short run in this regard. As well, it is clear that, although the strategy against food waste of the country is not well-defined yet, the participation of external stakeholders in projects such as the LIFE Foster sets the basis for starting building networks of profitable partnerships for Malta in terms of best practices and tools sharing on the topic.

### **Adaptation (2/5)**

As it has been previously addressed, Malta shares some similarities with the case of Luxembourg, for instance. The size of the country and the implication of the government have demonstrated to play a key role in the definition of efficient policies for driving green transition and fostering food waste prevention in education. In this regard, one could say that the VET LOVES FOOD Replication Path would be the most relevant resource of the Project in Malta's context. In a certain way, it is. It would be the breeding ground for Malta's government to start defining strategies aligned with the European green transition trend. However, as afore-mentioned, as well, Malta's socio-economic problem, along with the population density of the island and the massive tourism are factors that prevent many of the mentioned strategies from being efficient. The problem here lies in the issue of that, although the VET LOVES FOOD Replication Path is a great tool for Malta to stop developing two-speeds green educational campaigns and align with the European standards, the island is involved in a socio-economic context in which is very difficult that those changes could be integrated, at least in the short run.

## **Netherlands**

### **Relevance (4/5)**

As previously mentioned, the Netherlands demonstrates a robust commitment to providing clear and impactful recommendations to VET centres on the implementation of green-driven food waste prevention models. This commitment is reflected in national recommendations issued by the Dutch government, aimed at shaping and enhancing the curriculum and practices within VET centres.

The government recommendations likely highlight the significance of circular economy principles (National Circular Economy Programme 2023-2030) in the context of food waste prevention. VET centres are likely encouraged to teach students how to design and

implement practices that minimise waste and promote a closed-loop system within the food industry.

#### **Adaptation (4/5)**

The VET LOVES FOOD replication path offers a targeted and focused tool that holds the potential to serve as a more refined and specific set of guidelines for the Dutch government in their efforts to VET centres and stakeholders. This pathway could be instrumental in tailoring recommendations to the unique needs and context of the Netherlands, providing a clear roadmap for the integration of green-driven food waste prevention models within the VET framework. It enables the Dutch government to customise guidelines, taking into account the distinctive characteristics of the Dutch food industry, cultural practices, and sustainability goals.

Additionally, the transference of the VET LOVES FOOD replication path to the Netherlands national context could place emphasis on engaging VET stakeholders, including educators, businesses, and industry experts. It may outline strategies for fostering collaboration and communication channels to ensure that all stakeholders are actively involved in the implementation of green-driven food waste prevention models.

#### **Poland**

##### **Relevance (5/5)**

As previously noted, a notable progression in the Polish VET framework is the incorporation of green skills into the foundational curricula and educational programs spanning diverse vocational sectors. This integration goes beyond theoretical understanding, encompassing practical competencies that necessitate a rigorous adherence to environmental protection regulations.

In conjunction with this educational initiative, the commitment of Poland towards addressing crucial issues extends to the comprehensive guidelines formulated by national authorities. Specifically, these guidelines target the prevention of food waste within both the food industry and businesses, and they are intended to reach and engage the wider public. The formulation and dissemination of such guidelines underscore Poland's dedication to tackling this significant challenge.

The effort to integrate green skills into vocational education aligns seamlessly with the broader sustainability goals and reflects an acknowledgment of the intricate interplay

between environmental considerations and professional practices. Simultaneously, the commitment to reducing food waste emphasises Poland's proactive stance in addressing critical issues within both the economic and societal domains. This multifaceted approach, encompassing educational enhancements and practical guidelines, signifies a comprehensive strategy aimed at fostering a more sustainable and environmentally conscious approach within various sectors of the country.

Nevertheless, as far as we are aware, there are no explicit recommendations provided to VET centres regarding the implementation of models focused on preventing food waste with a green-oriented approach, so this result is highly relevant into the Polish national context.

### **Adaptation (5/5)**

Given the demonstrated commitment of the Polish government, we strongly believe that the VET LOVES FOOD replication path could be seamlessly adapted to the national context of Poland. This adaptation stands to enhance and fortify the existing measures at the national level, particularly those aimed at the integration of green skills within the VET system. Additionally, it presents an opportunity to contribute to the ongoing initiatives focused on reducing food waste within the agro-food sector.

The alignment of the VET LOVES FOOD replication path with the Polish context is rooted in the shared goal of promoting sustainability and addressing environmental challenges. The high level of this adaptation potential lies in its potential to complement and augment the efforts already in place, fostering a more robust and comprehensive approach to green skills integration and food waste reduction.

By embracing the VET LOVES FOOD model, Poland would have the opportunity to build on its existing commitment to sustainability and environmental responsibility. The model's emphasis on practical, hands-on experience aligns with the broader objectives of the VET system, ensuring that students not only gain theoretical knowledge but also acquire tangible skills that resonate with the green practices essential in today's professional landscape.

In essence, the VET LOVES FOOD replication path, when tailored to the Polish national context, has the potential to become a catalyst for advancing the country's objectives in sustainable education and practices within the agro-food sector.

## Romania

### Relevance (4/5)

Romania's vocational training system is in the process of evolution and adaptation, however the technical weight prevails over others such as the development of green skills within its training plan.

The level of development and achievement of the Sustainable Development Goals is relatively high, but there is still room for improvement (European Environmental Agency - EEA, 2023).

### Adaptation (0/5)

The VET LOVES FOOD Replication Path can contribute to an environment of evolution and sensitivity in the field of sustainability, as is the case in Romania.

We have not found any similar model in the country, so its application could be beneficial to Romania's interests.

## Slovakia

### Relevance (4/5)

Background information regarding vocational training curricula in the agrifood and HORECA sector is needed in order to understand the extent to which the VET LOVES FOOD Replication Path is relevant in the Slovakian educational context. As for the socio-cultural context, the Slovakian government and Slovakia's national level commitment to preventing food losses and waste is evidenced by the various measures and programs and can be welcomed as a positive effort toward sustainable approaches to food waste as a whole, although room for improvement should be considered (European Environmental Agency, 2021).

### Adaptation (3/5)

In the context of Slovakia, the VET LOVES FOOD Replication Path is extremely necessary as a means to foster green practices in VET and the HORECA sector in the country and to provide guidelines leading to sustainability-oriented approaches in the fields mentioned. For what specifically concerns Vocational Education and Training, in-depth research would be needed in order to further investigate existing curricula mainstreaming food waste prevention, food waste management and green skill as a whole.

At the social and cultural level, Slovakia's national level commitment to preventing food losses and waste is somehow positively evidenced by the various measures and programs put into practice.

## Slovenia

### Relevance (4/5)

According to the European Environmental Agency, in Slovenia, efforts to prevent food waste are part of a comprehensive strategy for the entire food supply chain developed by the Ministry of Agriculture, Forestry, and Food (pending adoption). This strategy will be complemented by an action plan that outlines goals, timelines, and responsible authorities, covering activities such as enhancing the efficiency of sustainable production, processing, distribution, marketing, and sales. Additional measures include information dissemination, awareness campaigns, education, training, stakeholder cooperation, and legislative actions (European Environmental Agency, 2023).

For instance, the EAT Circular project, sponsored by the European Institute of Innovation and Technology, offers training sessions for public and private sector officers on strategies to reduce the 'food print' (wasted food). Topics covered in these sessions include policies, best practices, processes, business models, and technologies for measuring, diverting, and avoiding food waste. Additionally, the NGO Ecologists Without Borders implemented a project focusing on preventing food waste in hospitals and retirement homes, resulting in a toolkit for monitoring food waste, the 'Just eat it!' awareness campaign, and intergenerational integration workshops.

To address challenges in redistributing food, a working group for food donation was established in 2013. The Agriculture Act includes provisions to support humanitarian organisations in covering the costs of technical equipment for food distribution. Tax legislation ensures that the price of donated food is considered zero if the total value of donated goods does not exceed 2% of the donor's revenue, promoting food donations and minimising waste.

No Food Waste Day recent declaration of 24 April as the Slovenian No Food Waste Day aligns with the recommendations for VET centres to implement green-driven food waste prevention models. The initiative, spearheaded by various partners including Lidl Slovenija, the Eco School project, and NGOs, emphasises raising awareness about the substantial food waste issue in Slovenia. The declaration aims to involve families,



individuals, companies, and public and private institutions in collective efforts to reduce food waste (Republic of Slovenia, 2023).

Official statistics revealing an increase in food waste from 118,000 tonnes in 2013 to 143,000 tonnes in 2021 underscore the urgency of addressing this issue. The average Slovenian throwing away 68 kilograms of food in 2021 highlights the need for sustainable models and guidelines. The initiative not only brings attention to the environmental impact of food waste, contributing to greenhouse gas emissions and degradation of soil, but also emphasises the wastage of water and energy used in food production.

As part of this initiative, posters have been created to raise awareness and encourage positive changes, while schools and kindergartens are organising activities on the topic. The engagement of various stakeholders in this campaign aligns with the collaborative approach recommended for VET centres. Furthermore, the launch of the innovative processing plant Mini Plant, sponsored by Lidl Slovenija, by the Etri group demonstrates practical steps toward addressing food waste in the country. These developments provide a valuable example for the formulation of national/regional guidelines and toolkits, adapting sustainable models to the specific needs of Slovenia in the fight against food waste.

#### **Adaptation (4/5)**

The recommendations for green-driven food waste prevention models, as outlined by VETLOVESFOOD, can find practical application in Slovenian Vocational Education and Training (VET) centres. Precisely, school restaurants and hotels established for efficient, practical education in catering and tourism, such as School Hotel Astoria (VGS Bled), Restaurant Kult 316 (BIC Ljubljana), and Restaurant Sedem (VSGT Maribor), play a key role in this context.

For instance, Restaurant Sedem, as a professional and business incubator of the Vocational College of Hospitality and Tourism Maribor, actively engages in the practical training model for VSGT students. This involvement aims to train staff as a sustainable and creative professional force for the future. Emphasising high-quality catering services, it integrates tangible and intangible elements within the given environment.

Similarly, “Srednja šola za gostinstvo in turizem Celje” (Secondary Vocational School for Catering and Tourism Celje) is a modern vocational school offering various

educational programs for the catering and tourism sector. The school actively participates in outside catering events at local, regional, and national levels, showcasing its commitment to practical education and industry engagement.

Moreover, a collaboration between the Higher Vocational College for Hospitality, Wellness, and Tourism of Bled and Hotel Astoria exemplifies a partnership providing practical training to students in higher education programs. The vocational College of Hospitality and Tourism Maribor offers comprehensive study programs, including courses on environmental preservation, legal norms, gastronomy fundamentals, kitchen and restaurant management, and various aspects of catering and service operations. These initiatives align with the principles of green-driven food waste prevention, making the VET LOVES FOOD model applicable and relevant in the Slovenian VET context.

Similarly, the recent declaration of 24 April as the Slovenian No Food Waste Day, aligning with the recommendations for VET centres to implement green-driven food waste prevention models, underscores a proactive approach to addressing food waste in Slovenia. Spearheaded by partners such as Lidl Slovenija, the Eco School project, and NGOs, this initiative is designed to raise awareness about the significant food waste challenge in the country. The declaration of No Food Waste Day seeks to actively engage families, individuals, companies, and public and private institutions in collaborative efforts to minimise food waste, aligning with the principles advocated by green-driven food waste prevention models in VET centres.

## Sweden

### Relevance (3/5)

The government in Sweden is taking steps to create a sustainable food system, and the Swedish Food Agency is playing a key role in it. They are working with various stakeholders to develop a shared vision for a sustainable Swedish food system, considering different policy areas. The goal is to provide support and guidance to citizens and businesses and promote collaboration with research projects. This effort involves government agencies, businesses, and the public. The work is ongoing until May 2022 and will result in a clear vision for sustainability, an assessment of how existing objectives steer the food system, and a structure for tracking progress. This aligns with Action Plans 2 and 3 of the Food Strategy, which aim to strengthen the implementation of sustainable practices in the food chain until 2025. This initiative could greatly benefit Vocational

Educational Training by offering a clear framework and direction in promoting sustainability within the food industry, aligning with global environmental goals.

#### Sweden's Pathway for Sustainable Food Systems

The roadmap serves as a valuable tool for future planning and strategic decision-making. It is part of a broader set of tools used for forward-looking initiatives. In crafting the roadmap, the government has aimed to highlight and organise key areas consistently emerging in dialogues. These selected areas are deemed to play a strategic role and have the potential to generate additional positive effects. The roadmap is a focused guide that outlines priority areas based on recurring themes identified through ongoing dialogues, aiming to strategically channel efforts for maximum impact and effectiveness in the envisioned goals (Government Offices of Sweden, 2021).

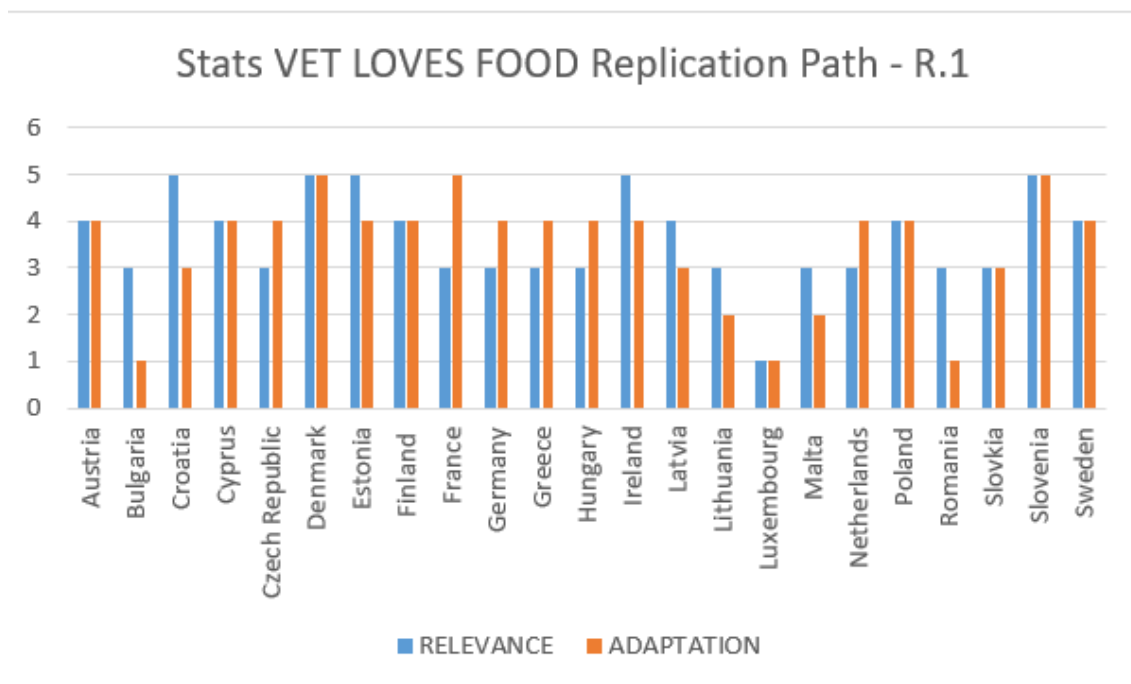
#### **Adaptation (4/5)**

The recommendations for VET centres to implement green-driven food waste prevention models, similar to the VET LOVES FOOD one, align with Sweden's government's broader approach to strategic planning. Just as the roadmap is part of a toolkit for forward-looking initiatives, these recommendations provide a focused guide for VET centres. They aim to highlight key areas—such as energy consumption, waste disposal, food culture, sustainable restaurant management, and diets—that have consistently emerged as priorities in the ongoing dialogues. By deeming these areas strategic, the recommendations suggest their potential to generate positive effects and maximise impact. The proposed national/regional guidelines and toolkits complement this approach, tailoring the implementation of sustainable models to the specific needs of each country/region. In essence, these recommendations strategically channel efforts to ensure maximum effectiveness in the fight against food waste within the VET context.

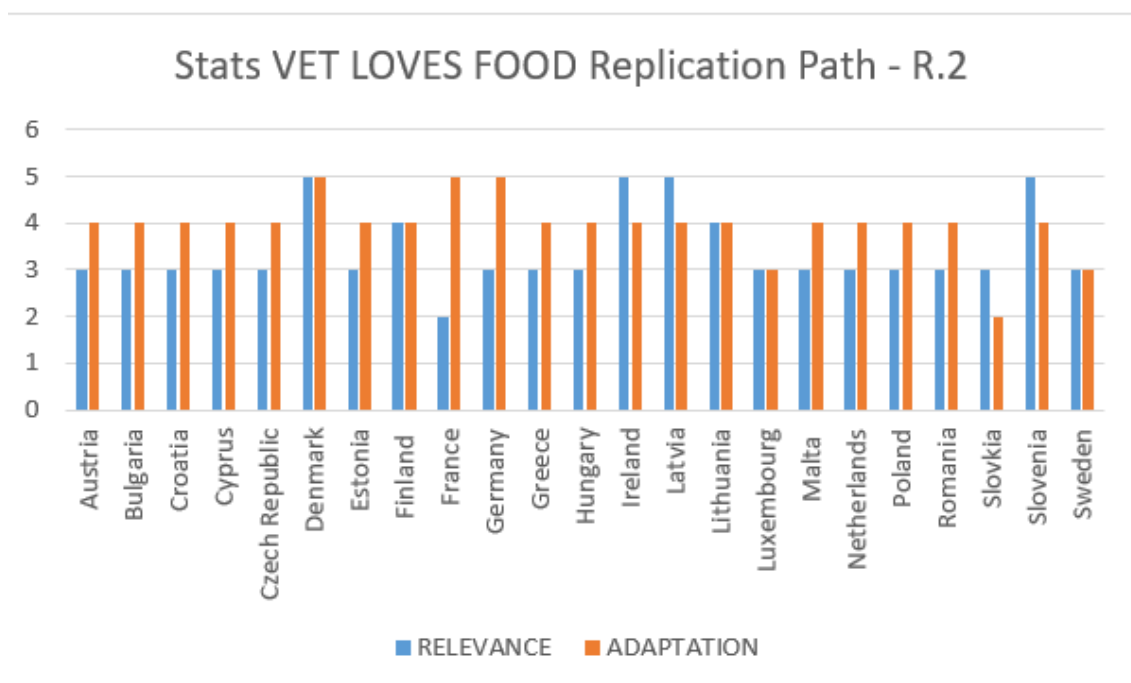
## CONCLUSIONS

Since the present document foresees that the most relevant conclusions on each country aspects are clustered within each country report, within the analysis section itself, in order to highlight certain aspects of the analysis, the following graphs are being provided:

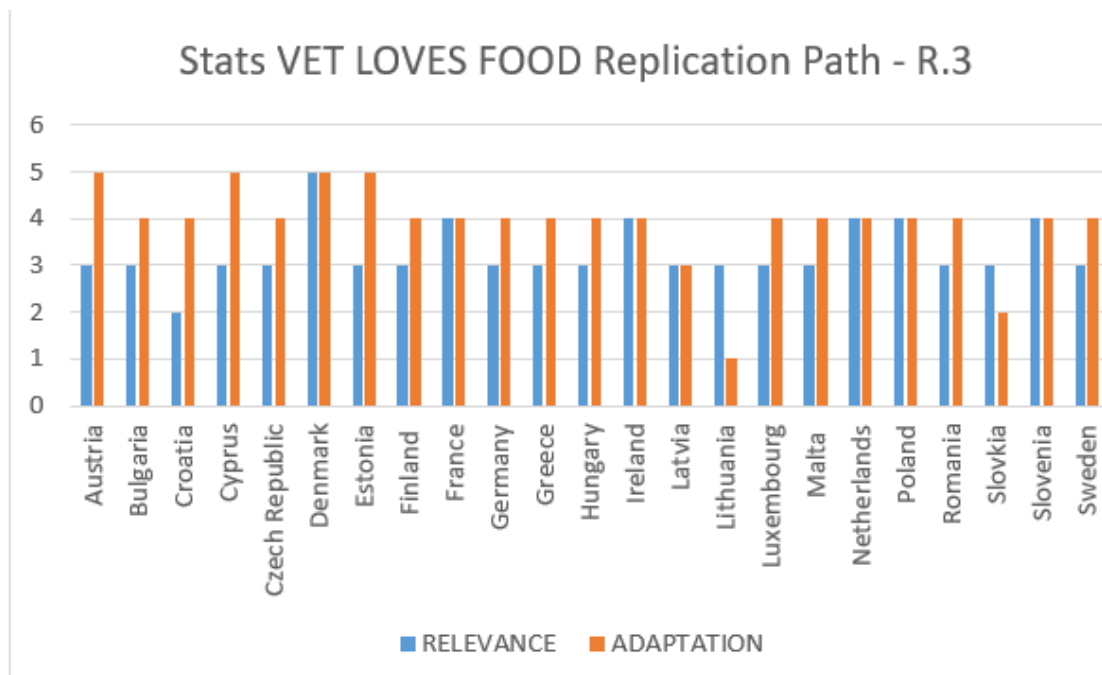
- a) Rank of the relevance and adaption of the countries analysed regarding the Result 1 of the VET LOVES FOOD Project:



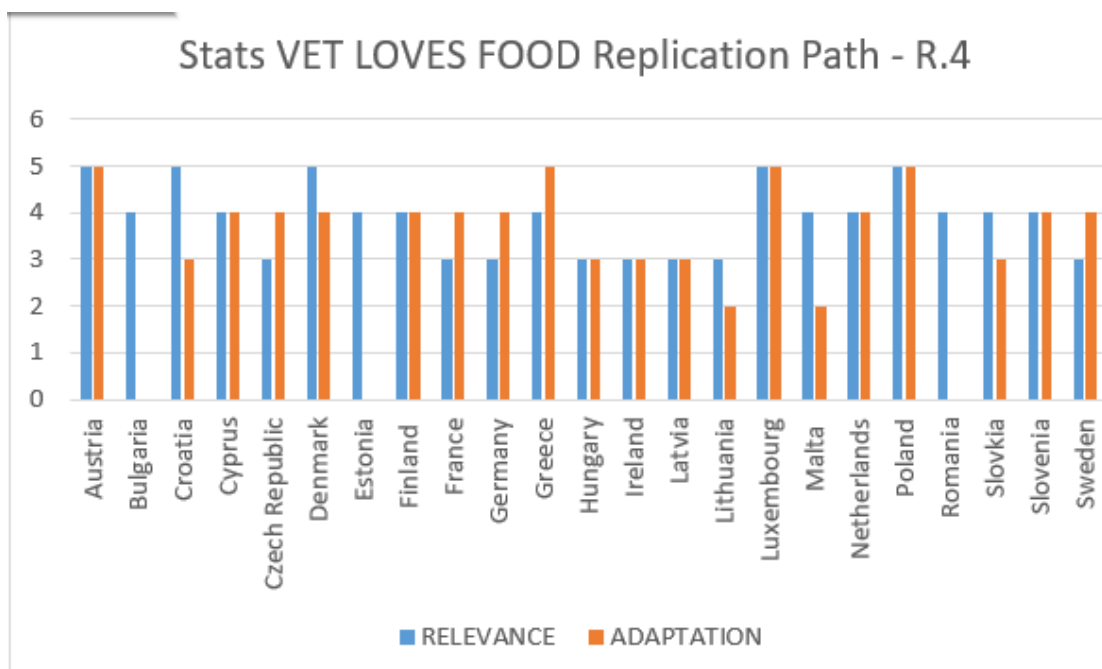
- b) Rank of the relevance and adaption of the countries analysed regarding the Result 2 of the VET LOVES FOOD Project:



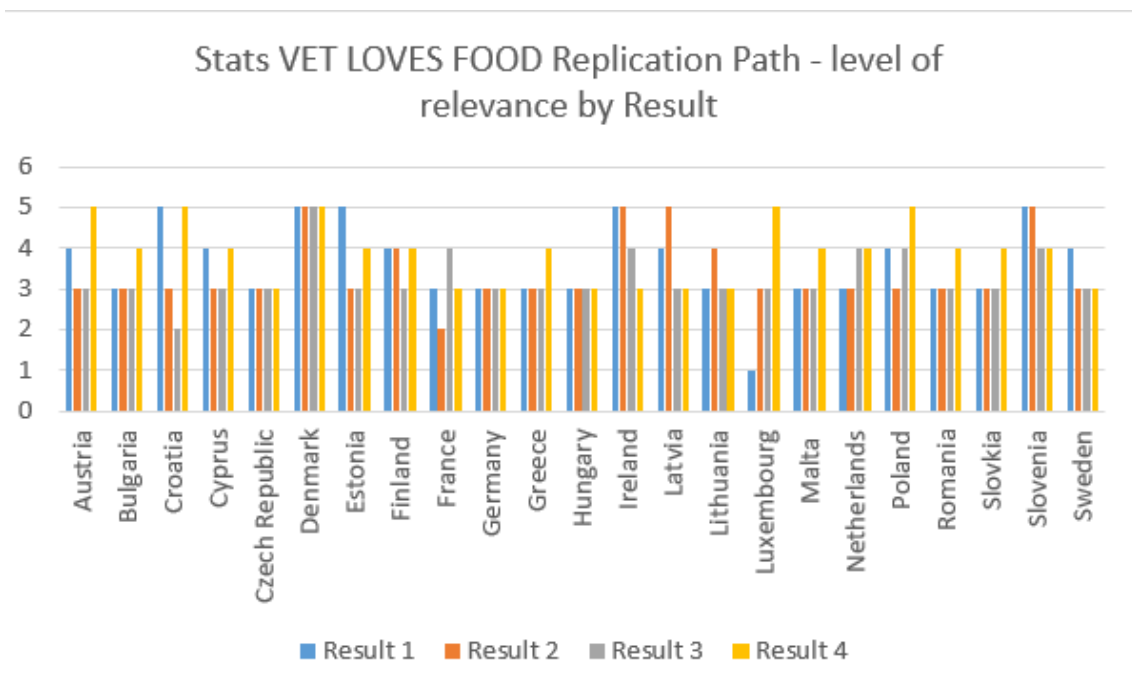
- c) Rank of the relevance and adaption of the countries analysed regarding the Result 3 of the VET LOVES FOOD Project:



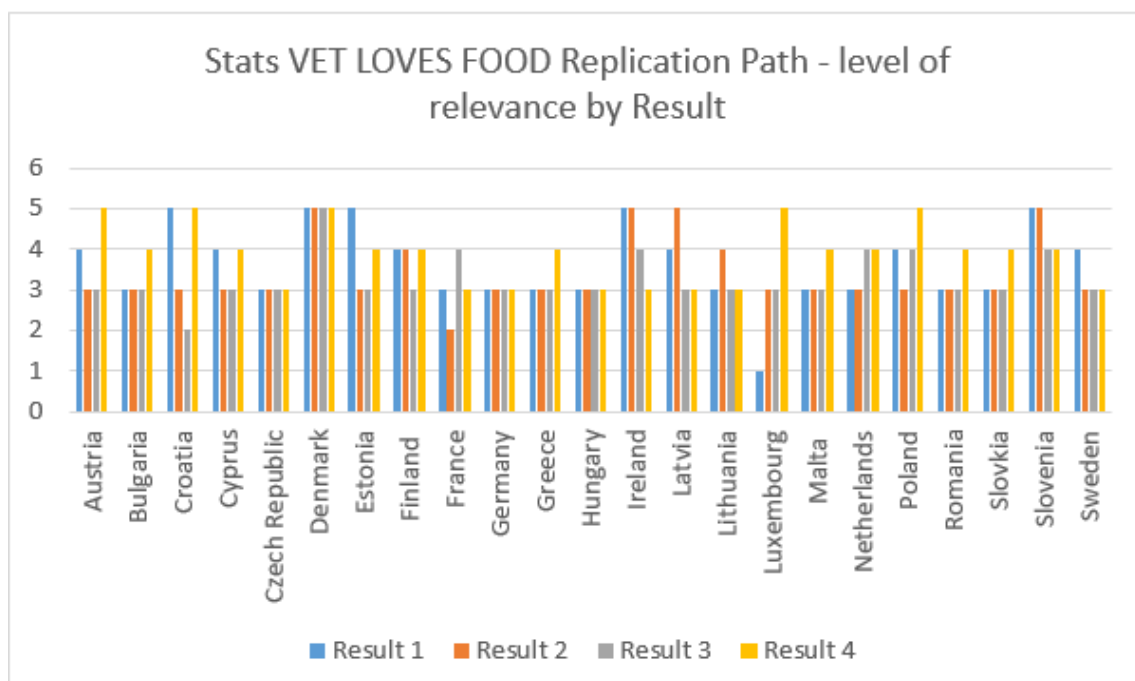
d) Rank of the relevance and adaption of the countries analysed regarding the Result 4 of the VET LOVES FOOD Project:



e) Rank of the level of relevance of each of the countries by Result:



f) Rank of the level of adaptation of each country by Result:



## BIBLIOGRAPHY

- 1909 - Sigtuna Stats Hotel. (2023). *Svinn Gott. 1909 - Sigtuna Stats Hotel*.  
<https://www.sigtunastadshotell.se/kalendarium/svinn-gott/>
- Agence Bio. (2010). Plan de développement Agriculture et alimentation Horizon 2012. *Agence Bio*.  
[https://www.agencebio.org/sites/default/files/upload/documents/3\\_Espace\\_Pro/7\\_PlanDeveloppementBio.pdf](https://www.agencebio.org/sites/default/files/upload/documents/3_Espace_Pro/7_PlanDeveloppementBio.pdf)
- Agricultural Association of the Czech Republic. (2023). Homepage. *Agricultural Association of the Czech Republic*. <https://www.zscr.cz/En>
- AINIA. (2022, 21 abril). 100 iniciativas sociales dedicadas a reducir el desperdicio de alimentos en la UE. AINIA. <https://www.ainia.es/ainia-news/100-iniciativas-sociales-reducir-desperdicio-alimentos-ue/>
- Aksu, H; Alonso, M; Braun, A; Cornelisse, F; den Dekker-Arlain, J; Dilrosun, D; Feng, J; van Gulick, R; van Haren, C; Idiculla, S; de Jongh, B; Lemmers, L; Liu, H; Lühsen, D; Namasivayam, A; Qian, J; Rempe, F; Runde, A; Schreurs, T; Wang, J; Wiltjer, S; Xie, Y; Yang, J. (2020). A Report of the Earth Malta – Food Waste in the Maltese Retail Sector: A Report Analysing Maltese Retail-Issued Food Waste And Suggesting Alternative Pathways For Friends Of The Earth Malta. *Wageningen University*.  
[https://foemalta.org/wp-content/uploads/2021/01/FoEM\\_WU\\_Food\\_Waste\\_Report\\_2020.pdf](https://foemalta.org/wp-content/uploads/2021/01/FoEM_WU_Food_Waste_Report_2020.pdf)
- AKTI. (2023). Sincerely, food – Cyprus. *AKTI*. [https://www.akti.org.cy/portfolio/sincerely-food-cyprus/#:~:text=Sincerely%20Food%2C%20Cyprus%2C%20is%20an,formal%20education'%20\(Project%20No](https://www.akti.org.cy/portfolio/sincerely-food-cyprus/#:~:text=Sincerely%20Food%2C%20Cyprus%2C%20is%20an,formal%20education'%20(Project%20No)
- AMS AUSBILDUNGSKOMPASS. (2023). Willkommen im AMS Ausbildungstompass. *AMS AUSBILDUNGSKOMPASS*. <https://www.ausbildungskompass.at/>
- Association of Conscious Consumers. (2023). About the Association of Conscious Consumers. *Association of Conscious Consumers*. <https://tudatosvasarlo.hu/english/>

- Austrian Hotelier Association. (2023). About the Austrian Hotelier Association. *Australian Hotelier Association*. <https://www.oehv.at/english/>
- Bord-Bia Irish Food Board. (2023). Nurturing a thriving future - Statement of Ten Year and Three Year Strategy.
- Bulgarian Ministry of Environment and Water. (2020). Bulgarian National Waste Management Plan 2021- 2028. Bulgarian Ministry of Environment and Water. [https://www.moew.government.bg/static/media/ups/tiny/%D0%A3%D0%9E%D0%9E%D0%9F/%D0%9D%D0%9F%D0%A3%D0%9E-2021-2028/NPUO\\_2021-2028.pdf](https://www.moew.government.bg/static/media/ups/tiny/%D0%A3%D0%9E%D0%9E%D0%9F/%D0%9D%D0%9F%D0%A3%D0%9E-2021-2028/NPUO_2021-2028.pdf)
- C Knowledge Hub. 2023. Luxembourg's National Waste and Resource Management Plan. *Circle Economy Foundation*. <https://knowledge-hub.circle-economy.com/article/6905?n=Luxembourg%27s-National-Waste-and-Resource-Management-Plan>
- Caruana, C; Midsuf, M. 2015. Reinforcing Sustainable Development in Schools in Malta: A Potential Approach by the University of Malta to Meet the Country's Sustainable Development Challenges. CEE – University of Malta. DOI: [http://dx.doi.org/10.1007/978-3-319-10690-8\\_15](http://dx.doi.org/10.1007/978-3-319-10690-8_15)
- CEDEFOP. (2010). Skills for Green Jobs – Country Report: France. *CEDEFOP*. [https://www.ilo.org/wcmsp5/groups/public/@ed\\_emp/@ifp\\_skills/documents/publication/wcms\\_142481.pdf](https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@ifp_skills/documents/publication/wcms_142481.pdf)
- CEDEFOP. (2012). Lithuania - Sharing good practice in vocational education and training. CEDEFOP. <https://www.cedefop.europa.eu/en/news/lithuania-sharing-good-practice-vocational-education-and-training>
- CEDEFOP. (2015). Vocational education and training in Latvia - Short description. *Luxembourg: Publications Office of the European Union*. [https://www.cedefop.europa.eu/files/4134\\_en.pdf](https://www.cedefop.europa.eu/files/4134_en.pdf)
- CEDEFOP. (2021). Ireland: EU funding used for new VET programme supporting the digital and green transitions. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/ireland-eu-funding-used-new-vet-programme-supporting-digital-and-green-transitions>



- CEDEFOP. (2021). Latvia: new momentum for green approaches in VET. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/latvia-new-momentum-green-approaches-vet>
- CEDEFOP. (2021). Vocational education and training in Europe - Detailed description of VET systems in Europe. *CEDEFOP*. <https://www.cedefop.europa.eu/en/tools/vet-in-europe/systems/cyprus-u2>
- CEDEFOP. (2021). Vocational Education and Training in Europe – Latvia. *CEDEFOP*. <https://www.cedefop.europa.eu/en/print/pdf/node/145577>
- CEDEFOP. (2022). Denmark: Green transition in vocational education. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/denmark-green-transition-vocational-education>
- CEDEFOP. (2022). Estonia: VET prepares for the green transition with awareness raising. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/estonia-vet-prepares-green-transition-awareness-raising>
- CEDEFOP. (2022). Timeline of VET policies in Europe - The National platform for progress in VET: Lithuania. *CEDEFOP*. <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/43482>
- CEDEFOP. (2023). Greening Apprenticeships: Bulgaria. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/greening-apprenticeships-bulgaria-0>
- CEDEFOP. (2023). Growing green: How vocational education and training can drive the green transition in agri-food. *CEDEFOP*. <https://www.cedefop.europa.eu/en/publications/9181>
- CEDEFOP. (2024). Estonia: the national VET team supports innovation and greening of VET. *CEDEFOP*. <https://www.cedefop.europa.eu/en/news/estonia-national-vet-team-supports-innovation-and-greening-vet>
- CEED Bulgaria. (2023). GreenVETnet. *CEED Bulgaria*. <https://ceed.bg/en/2022/02/01/greenvetnet/>
- Champions 12.3. (2017). Denmark's Work to Reduce Food Loss & Waste. *Champions 12.3*. <https://champions123.org/sites/default/files/2020-09/danish-1-30.pdf>

- Chawla, L. 2018. Nature-based learning for student achievement and ecological citizenship. *Curriculum and Teaching Dialogue*, 20(1-2).  
<https://go.gale.com/ps/i.do?id=GALE%7CA572943584&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=1538750X&p=AONE&sw=w&userGroupName=anon%7E68d0c541&aty=open-web-entry>
- Circe. (2018). Slovenians create "our super food" website. *Circe*. <https://projects2014-2020.interregeurope.eu/circe/news/news-article/3692/slovenians-create-our-super-food-website/>
- Cleantech Bulgaria (2023). INGENIOUS – enabling learners to gain skills in engaging and interactive environment. *Cleantech Bulgaria*. <https://cleantech.bg/en/ingenious-enabling-learners-to-gain-skills-in-engaging-and-interactive-environment/>
- Climate4Change. (2023). Homepage. *Climate4Change*. <https://www.care4climate.si/en>
- Climate-neutral Tallinn. (2021). Tallinn Sustainable Energy and Climate Action Plan 2030. *Climate-neutral Tallinn*. <https://www.tallinn.ee/et/media/309750>
- Columbia Hotel Academy. (2023). Culinary Professional Diploma. *Columbia Hotel Academy*. <https://columbiaacademycy.com/programmes/culinary-programme/>
- Construction, Quality & Green Skills. (2022). Green Skills for FET 2021- 2030. *Construction, Quality & Green Skills*. <https://www.solas.ie/f/70398/x/ad5c9417fe/green-skills-for-fet-2021-2030.pdf>
- COST - European Cooperation in Science and Technology. 2023. CA22134 - Sustainable Network for agrofood loss and waste prevention, management, quantification and valorisation (FoodWaStop). *COST – European Cooperation in Science and Technology*. <https://www.cost.eu/actions/CA22134/>
- Croatian Food Agency – HAH. (2024). About HAH. *Croatian Food Agency – HAH*. <https://www.hah.hr/en/>
- Czech Chamber of Commerce. (2023). Who we are? *Czech Chamber of Commerce*. <https://www.komora.cz/en/>

- Dahl, A; Vibeke, A; Trolle, E. (2023). Current Practices and Opportunities for More Sustainable Public Food Procurement: A Qualitative Study among Danish Municipalities and Regions. *PubMed Central*, 12(10): 1975. DOI: [10.3390/foods12101975](https://doi.org/10.3390/foods12101975)
- De Lorenzo, R. (2021). Denmark's Take Away Trash Culture And Food Waste On The Agenda. *Forbes*. <https://www.forbes.com/sites/danieladelorenzo/2021/04/21/denmarks-take-away-trash-culture-and-food-waste-on-the-agenda/?sh=33551d7646dd>
- Dikigoropoulou, N. (2021). Municipal Waste Management Strategy 2021 – 2027. *Department of Environment*. [https://projects2014-2020.interregeurope.eu/fileadmin/user\\_upload/tx\\_tevprojects/library/file\\_1652946829.pdf](https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1652946829.pdf)
- Dobri dom. (2024). Signed voluntary agreement - Together against food waste. *Dobri dom*. [https://www.dobri-dom.hr/english/article\\_4/signed-voluntary-agreement-together-against-food-waste\\_91/](https://www.dobri-dom.hr/english/article_4/signed-voluntary-agreement-together-against-food-waste_91/)
- EDGE Foundation. (2023). Lessons from Lithuania: Making VET an attractive route for young people. *EDGE Foundation*. <https://www.edge.co.uk/news-and-events/blogs/lessons-from-lithuania-making-vet-an-attractive-route-for-young-people/>
- Education and Training Boards Ireland – ETBI. (2024). Homepage. *Education and Training Boards Ireland – ETBI*. <https://www.etbi.ie/>
- Élelmiszermentés. (2023). Homepage. *Élelmiszermentés*. <https://elelmiszermentes.hu/>
- Environmental Protection Agency – EPA. (2023). Summary 2023. *Environmental Protection Agency – EPA*. <https://www.epa.ie/>
- EU Food Loss and Food Waste Prevention Hub. 2023. Member State Page: Lithuania. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/LT](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/LT)
- EU Food Loss and Food Waste Prevention Hub. 2023. Member State Page: Slovakia. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/SK](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/SK)

EU Food Loss and Food Waste Prevention Hub. 2023. Member State Page: Slovenia. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/SI](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/SI)

EU Food Loss and Food Waste Prevention Hub. 2023. Member State Page: Hungary. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/HU](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/HU)

EU Food Loss and Food Waste Prevention Hub. 2023. Member State Page: Poland. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/PL](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/PL)

EU Food Loss and Waste Prevention Hub. (2023). Member State Page: Bulgaria. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/BG](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/BG)

EU Food Loss and Waste Prevention Hub. (2023). Member State Page: Denmark. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/DK](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/DK)

EU Food Losses and Food Waste Prevention Hub. 2023. Member State Page: Estonia. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/EE](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/EE)

EU Food Losses and Food Waste Prevention Hub. 2023. Member State Page: Latvia. *EU Food Loss and Waste Prevention Hub*. [https://ec.europa.eu/food/safety/food\\_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/LV](https://ec.europa.eu/food/safety/food_waste/eu-food-loss-waste-prevention-hub/eu-member-state-page/show/LV)

European Commission. (2020). Report on a toolkit for national and regional decision-makers Supporting sustainability transitions under the European Green Deal with cohesion policy. Luxembourg: Publications Office of the European Union. <https://eurocid.mne.gov.pt/sites/default/files/repository/paragraph/documents/9193/reportsusttransiten.pdf>

European Commission. (2022). Education and Training Monitor 2022 – Lithuania. *European Commission*. <https://op.europa.eu/webpub/eac/education-and-training-monitor-2022/en/country-reports/lithuania.html#5-vocational-education>

European Commission. (2023). Vocational Education and Training and the Green Transition: A Compendium of Practices. *Luxembourg: Publications Office of the European Union*. <https://www.bollettinoadapt.it/wp-content/uploads/2023/06/vocational-education-and-training-and-the-green-transition-KE0423617ENN.pdf>

European Commission. (2023). Vocational Education and Training and the Green Transition A Compendium of inspiring practices. *Luxembourg: Publications Office of the European Union*. <https://www.bollettinoadapt.it/wp-content/uploads/2023/06/vocational-education-and-training-and-the-green-transition-KE0423617ENN.pdf>

European Environmental Agency – EEA (2023). Country profiles on waste prevention – 2023: Bulgaria. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2021). Waste Prevention Country Profile: Slovakia. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2023). Country profiles on waste prevention – 2023: Estonia. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/themes/waste/waste-prevention/countries/>

European Environmental Agency – EEA. (2023). Waste prevention country profile – Latvia. *European Environmental Agency – EEA*. [https://www.eea.europa.eu/themes/waste/waste-prevention/countries/2023-waste-prevention-country-fact-sheets/latvia\\_waste\\_prevention\\_2023](https://www.eea.europa.eu/themes/waste/waste-prevention/countries/2023-waste-prevention-country-fact-sheets/latvia_waste_prevention_2023)

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Lithuania. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/en/countries/eea-member-countries/lithuania>

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Austria. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Croatia. *European Environmental Agency – EEA*. <https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Cyprus.  
*European Environmental Agency – EEA.*  
<https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Germany.  
*European Environmental Agency – EEA.*  
<https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Environmental Agency – EEA. (2023). Waste Prevention Country Profile: Romania.  
*European Environmental Agency – EEA.*  
<https://www.eea.europa.eu/themes/waste/waste-prevention/countries>

European Social Fund Plus. (2022). Eco-Schools. *European Commission.* <https://european-social-fund-plus.ec.europa.eu/en/social-innovation-match/case-study/eco-schools>

European Training Foundation. (2023). Building evidence to support vocational excellence for the digital and green transitions: The Role of Centres of Vocational Excellence in the Green Transition. European Training Foundation. *European Training Foundation.*  
[https://www.etf.europa.eu/sites/default/files/2023-11/P233084 ETF Green%20transition EN v2-4COL\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2023-11/P233084 ETF Green%20transition EN v2-4COL_0.pdf)

Eurydice. (2024). Bulgaria – Ongoing Reforms and Policy Developments: National reforms related to transversal skills and employability. *Eurydice.*  
<https://eurydice.eacea.ec.europa.eu/national-education-systems/bulgaria/national-reforms-related-transversal-skills-and-employability>

Eurydice. (2024). Luxembourg - Ongoing reforms and policy developments: National reforms in vocational education and training and adult learning. *Eurydice.*  
<https://eurydice.eacea.ec.europa.eu/national-education-systems/luxembourg/national-reforms-vocational-education-and-training-and-adult>

Fáilte Ireland. (2022). Waste Management – Climate Actions Guide. *Irish Tourism Industry.*  
[https://issuu.com/discoverireland/docs/fi\\_04\\_climateaction\\_waste?fr=sZmJlMDU0Mjg3NjU](https://issuu.com/discoverireland/docs/fi_04_climateaction_waste?fr=sZmJlMDU0Mjg3NjU)

Federal Republic Ministry of Austria - Climate Action, Environment, Energy, Mobility

Innovation and Technology. (2023). Waste Prevention: Austria. *Federal Republic Ministry of Austria - Climate Action, Environment, Energy, Mobility Innovation and Technology.*



Co-funded by  
the European Union

<https://www.bmk.gv.at/en/topics/climate-environment/waste-resource-management/waste-prevention/austria.html>

Filomonau, V; Fidan, H; Alexieva, T; Dragoev, Stefan, Dimitrova, D. (2019). Restaurant food waste and the determinants of its effective Management in Bulgaria: An exploratory case study of restaurants in Plovdiv. *Tourism Management Perspectives*, 32. <https://www.sciencedirect.com/science/article/abs/pii/S2211973619301096>

Finland Forum. (2023). Culture & Cuisine. *Finland Forum*. <https://www.finlandforum.org/viewforum.php?f=12>

Food And Agriculture Organization Of The United Nations. (2023). 15 consejos breves para reducir el desperdicio de alimentos y convertirse en héroe del sector alimentario. (s. f.). Food And Agriculture Organization Of The United Nations. <https://www.fao.org/fao-stories/article/es/c/1310221/>

FOODPAIRING. (2023). The Food Pairing Book. *FOODPAIRING*. <https://www.foodpairing.com/the-foodpairing-book/>

FoodRus. (2023). About the Project. *FoodRus*. <https://www.foodrus.eu/about-the-project/>

Forskarsfredag. (2023). The Food Waste Experiment 2020. *Forskarsfredag*. <https://forskarsfredag.se/researchers-night/mass-experiments/get-wise-on-food-waste/>

FUSIONS. (2016). Denmark ±Country Report on national food waste policy. *FUSIONS*. <https://www.eu-fusions.org/phocadownload/country-report/DENMARK%2023.02.16.pdf>

Futouris. (2023). Sustainable Food Toolkit. *Futouris*. <https://sustainable-food.futouris.org/>

Government of Ireland. (2018). National Strategy on Education for Sustainable Development in Ireland. *Government of Ireland*. <https://www.gov.ie/en/publication/02952d-national-strategy-on-education-for-sustainable-development-in-ireland/>

Government of Ireland. (2023). ESD to 2030: Second National Strategy on Education for Sustainable Development. *Government of Ireland*. <https://www.gov.ie/en/publication/8c8bb-esd-to-2030-second-national-strategy-on-education-for-sustainable-development/>



- Government of Latvia. (2017). Strategy For The Implementation Of The School Scheme In Latvia. Government of Latvia. [https://agriculture.ec.europa.eu/system/files/2018-10/lv-school-scheme-strategy-2017-23\\_en\\_0.pdf](https://agriculture.ec.europa.eu/system/files/2018-10/lv-school-scheme-strategy-2017-23_en_0.pdf)
- Government of Netherlands. (2023). Cutting Down Food Waste. *Government of Netherlands*. <https://www.government.nl/topics/food/cutting-down-on-food-waste>
- Government of the Republic of Croatia. (2022). Decision on Adoption of the Plan for Prevention and Reduction of Food Waste Generation of the Republic Of Croatia 2019 – 2022. *Government of the Republic of Croatia*. [https://food.ec.europa.eu/system/files/2020-05/fw\\_lib\\_fwp-strat\\_national-strategy\\_hrv\\_en.pdf](https://food.ec.europa.eu/system/files/2020-05/fw_lib_fwp-strat_national-strategy_hrv_en.pdf)
- Government of the Republic of Croatia. (2022). Waste Management Plan of the Republic of Croatia for the Period 2017-2022. *Government of the Republic of Croatia*. [https://mingor.gov.hr/UserDocsImages/UPRAVA-ZA-PROCJENU-UTJECAJA-NA-OKOLIS-ODRZIVO-GOSPODARENJE-OTPADOM/Sektor%20za%20odr%C5%BEivo%20gospodarenje%20otpadom/Ostalo/management\\_plan\\_of\\_the\\_republic\\_of\\_croatia\\_for\\_the\\_period\\_2017-2022.pdf](https://mingor.gov.hr/UserDocsImages/UPRAVA-ZA-PROCJENU-UTJECAJA-NA-OKOLIS-ODRZIVO-GOSPODARENJE-OTPADOM/Sektor%20za%20odr%C5%BEivo%20gospodarenje%20otpadom/Ostalo/management_plan_of_the_republic_of_croatia_for_the_period_2017-2022.pdf)
- Government Offices of Sweden. (2021). Sweden's Pathway for Sustainable Food Systems. *Government Offices of Sweden*. <https://summitdialogues.org/wp-content/uploads/2021/09/Swedish-National-Pathway-for-Sustainable-Food-Systems-Final.pdf>
- Green Dot. (2023). Homepage. *Green Dot*. <https://greendot.com.cy/en/our-company/green-dot-at-a-glance/>
- GulaSana. (2023). La estrecha relación de la alimentación y el cambio climático. *GulaSana*. <https://www.gulasana.com/blog/alimentacion-cambio-climatico/>
- HAMK - Häme University of Applied Sciences. (2023). Homepage. *HAMK - Häme University of Applied Sciences*. <https://www.hamk.fi/en/>
- Henno, I. (2015). Ten Years of Education for Sustainable Development in Estonia. *UNESCO*. [https://unesco.ee/public/10\\_years\\_of\\_ESD\\_in\\_Estonia\\_Henno.pdf](https://unesco.ee/public/10_years_of_ESD_in_Estonia_Henno.pdf)
- HFS. (2023). Herzlich willkommen an der Hotelfachschule Hamburg (HFS) – dem optimalen Sprungbrett für Ihre berufliche Weiterentwicklung. *HFS*. <https://hotelfachschule-hamburg.de/>



HOBVERSE. (2023). Sustainable School. *HOBVERSE*. <https://svjc.lt/sustainable-school/>

I feel Slovenia. (2023). Taste Slovenia - ACTION PLAN FOR THE DEVELOPMENT AND MARKETING OF GASTRONOMY TOURISM 2019

– 2023. I feel Slovenia. [https://www.slovenia.info/uploads/gastronomija\\_b2b/ang\\_ang\\_low\\_res.pdf](https://www.slovenia.info/uploads/gastronomija_b2b/ang_ang_low_res.pdf)

Instituto de Desarrollo Productivo de Tuctumán. (2018). Informe Comercial: Rumanía. *Instituto de Desarrollo Productivo de Tuctumán*. <https://idep.gov.ar/webidep/wp-content/uploads/2021/06/Informe-comercial-Rumania.pdf>

International Organization Labor. (2023). Un futuro sostenible y más respetuoso del medio ambiente precisa de competencias verdes. *International Organization Labor*. [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_709342/lang--es/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_709342/lang--es/index.htm).

Internetowny System Aktów Prawnych. (2020). Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 16 września 2020 r. w sprawie ogłoszenia jednolitego tekstu ustawy o przeciwdziałaniu marnowaniu żywności. *Internetowny System Aktów Prawnych*. <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001645>

KARMA. (2015). The hub. *KARMA*. <https://thehub.io/startups/karma>

Kiryakova-Dineva, T; Kyurova, V; Chankova, Y. (2019). Soft Skills for Sustainable Development in Tourism: The Bulgarian Experience. *European Journal of Sustainable Development*, 8(2), 57-68. DOI: [10.14207/ejsd.2019.v8n2p57](https://doi.org/10.14207/ejsd.2019.v8n2p57)

Kouluruoka.fi. (2023). Luostarivuoren koulu, Luostarin yksikköValitse omaksi ravintolaksi. Kouluruoka.fi. [https://kouluruoka.fi/menu/turku\\_luostarivuorenkoulu/luostarinyksikko/](https://kouluruoka.fi/menu/turku_luostarivuorenkoulu/luostarinyksikko/)

Livsmedelsverket. (2021). Handbook for reducing food waste – for health care, schools and care services. *Livsmedelsverket*. [https://www.livsmedelsverket.se/globalassets/publikationsdatabas/handbocker-verktyg/handbook\\_for\\_reducing\\_food\\_waste.pdf](https://www.livsmedelsverket.se/globalassets/publikationsdatabas/handbocker-verktyg/handbook_for_reducing_food_waste.pdf)

Livsmedelsverket. (2023). Homepage. *Livsmedelsverket*. <https://www.livsmedelsverket.se/en>

Livsmedelsverket. (2024). About us. *Livsmedelsverket*. <https://www.livsmedelsverket.se/en/about-us>

- Lonska, J; Zvaigzne, A; Kotane, I; Silicka, I; Litavniece, L; Kodors , S; Deksnē, J; Vonoga, A. (2022). Plate Waste in School Catering in Rzekne, Latvia. *Sustainability*, 14(7), 4046. <https://doi.org/10.3390/su14074046>
- Magyar Élelmiszerbank Egyesület. (2023). Homepage. *Magyar Élelmiszerbank Egyesület*. <https://www.elelmiszerbank.hu/>
- Malta Business Bureau – MBB. (2019). Waste Not, Want Not. *Malta Business Bureau – MBB*. [https://mbb.org.mt/project\\_news/waste-not-want-not/](https://mbb.org.mt/project_news/waste-not-want-not/)
- Maradék Nékul. (2023). Homepage. Maradék Nékul. <https://maradeknelkul.hu/>
- Matvett. (2018). "Best Before" Often Means "Good After". *Matvett*. <https://www.matvett.no/bransje/matvett-in-english/best-before-often-means-good-after>
- MBO. (2023). Homepage. *MBO*. <https://www.mboraad.nl/english>
- Messerer. 2022. New Strategies for VET in Luxembourg. 3s. <https://3s.co.at/projects/new-strategies-for-vet-in-luxembourg/>
- Ministertvo Životního Prostředí. (2023). Homepage. *Ministertvo Životního Prostředí*. <https://www.mzp.cz/>
- Ministru kabinets. (2020). Prasības pārtikas izplatīšanai pēc minimālā derīguma termiņa beigām. *LIKUMI*. <https://likumi.lv/ta/id/316725-prasibas-partikas-izplatisanai-pec-minimala-deriguma-termina-beigam>
- Ministry of Agricultural and Rural Development. (2023). Publications and Informational Materials. *Ministry of Agricultural and Rural Development*. [https://www.madr.ro/en/food-waste/publications-and-informational-materials.html#:~:text=\(Source%20FAO\)%20Prevention,Presentation%20food%20waste](https://www.madr.ro/en/food-waste/publications-and-informational-materials.html#:~:text=(Source%20FAO)%20Prevention,Presentation%20food%20waste)
- Ministry of Agriculture and Forestry of Finland. (2024). Homepage. *Ministry of Agriculture and Forestry of Finland*. [https://mmm.fi/en/frontpage?p\\_p\\_id=fi\\_yja\\_language\\_version\\_tool\\_web\\_portlet\\_LanguageVersionToolMissingNotificationPortlet&\\_fi\\_yja\\_language\\_version\\_tool\\_web\\_portlet\\_LanguageVersionToolMissingNotificationPortlet\\_missingLanguageVersion=1](https://mmm.fi/en/frontpage?p_p_id=fi_yja_language_version_tool_web_portlet_LanguageVersionToolMissingNotificationPortlet&_fi_yja_language_version_tool_web_portlet_LanguageVersionToolMissingNotificationPortlet_missingLanguageVersion=1)

Ministry of Agriculture, Agrifood and Forestry. (2016). Ministry of Agriculture, Agrifood and Forestry in Action. *Ministry of Agriculture, Agrifood and Forestry*. [https://agriculture.gouv.fr/sites/default/files/plaqmingb72\\_0.pdf](https://agriculture.gouv.fr/sites/default/files/plaqmingb72_0.pdf)

Ministry of Agriculture, Forestry and Food. (2023). Quality and labelling of agricultural products and foodstuffs. *Ministry of Agriculture, Forestry and Food*. <https://www.gov.si/en/policies/agriculture-forestry-and-food/the-safety-and-quality-of-food-and-feed/quality-and-labelling-of-agricultural-products-and-foodstuffs/>

Ministry of Agriculture, Nature and Food Quality of Netherlands. (2022). Agricultural professional education & vocational training in Bulgaria: Opportunities for cooperation with the Netherlands. *Agroberichten Buitenland*. <https://www.agroberichtenbuitenland.nl/actueel/nieuws/2022/01/26/agricultural-professional-education--vocational-training-in-bulgaria>

Ministry of Education and Science Republic of Latvia. (2023). Vocational Education. *Ministry of Education and Science Republic of Latvia*. [https://www.izm.gov.lv/en/vocational-education?utm\\_source=https%3A%2F%2Fwww.google.com%2F](https://www.izm.gov.lv/en/vocational-education?utm_source=https%3A%2F%2Fwww.google.com%2F)

Ministry of Environment - Republic of Lithuania. (2023). Lithuania - Voluntary National Review on the Implementation of the 2030 Agenda for Sustainable Development. *Ministry of Environment - Republic of Lithuania*. <https://hlpf.un.org/sites/default/files/vnrs/2023/VNR%202023%20Lithuania%20Report.pdf>

Ministry of Environment of the Slovak Republic. (2023). Greener Slovakia - Strategy of the Environmental Policy of the Slovak Republic until 2030. Ministry of Environment of the Slovak Republic. <https://faolex.fao.org/docs/pdf/slo211277.pdf>

Ministry of Environmental Protection and Regional Development Republic of Latvia. (2022). Waste To Resources Latvia - boosting regional sustainability and circularity (LIFE Waste To Resources IP). *Ministry of Environmental Protection and Regional Development Republic of Latvia*. [https://www.varam.gov.lv/en/projects/waste-resources-latvia-boosting-regional-sustainability-and-circularity-life-waste-resources-ip?utm\\_source=https%3A%2F%2Fwww.google.com%2F](https://www.varam.gov.lv/en/projects/waste-resources-latvia-boosting-regional-sustainability-and-circularity-life-waste-resources-ip?utm_source=https%3A%2F%2Fwww.google.com%2F)

Ministry of Family, Labour and Social Policy. (2023). What we do. *Ministry of Family, Labour and Social Policy*. <https://www.gov.pl/web/rodzina/podstawy-prawne>

- MyFarm. (2023). Homepage. *MyFarm*. <https://www.myfarmharta.com/>
- Nagref. (2023). ELGO – Greek Agricultural Organization. *Nagref*. <http://www.nagref.gr/>
- National Employment Public Foundation. (2010). Practical Handbook of the Sustainability of Non-Profit Organisations for Employment Purposes. National Employment Public Foundation. [https://ofa.hu/files/Pertu/fenntarthatosagi\\_kezikonyv.pdf](https://ofa.hu/files/Pertu/fenntarthatosagi_kezikonyv.pdf)
- OECD iLibrary. (2023). Drivers for the circular transition in Tallinn, Estonia. OECD iLibrary. <https://www.oecd-ilibrary.org/sites/9bf20fde-en/index.html?itemId=/content/component/9bf20fde-en>
- OECD. (2022). Supporting employers in promoting skills development in Latvia: Assessing the key barriers and enabling conditions for employers to invest in skills development in Latvia. OECD. <https://www.oecd.org/skills/latvia-employers-report-2022.pdf>
- One Planet. (2024). Waste Prevention Portal in Croatia. *One Planet*. <https://www.oneplanetnetwork.org/knowledge-centre/resources/waste-prevention-portal-croatia>
- Opintopolku. (2015). Perusopetukseen valmistavan opetuksen opetussuunnitelman perusteet 2015. *Opintopolku*. <https://eperusteet.opintopolku.fi/#/en/perusopetus/1541511/tekstikappale/1541484>
- PACE - Platform for Accelerating the Circular Economy. (2023). Actions Working Toward Circularity for Food Systems: Denmark against Food Waste. *PACE - Platform for Accelerating the Circular Economy*. <https://pacecircular.org/denmark-against-food-waste>
- Permanent mission of France to the United Nations in Rome (FAO, IFAD, WFP). (2023). Global Issues – Food Loss and Waste. *Permanent mission of France to the United Nations in Rome (FAO, IFAD, WFP)*. <https://onu-rome.delegfrance.org/Food-loss-and-waste>
- Piscopo, S; Mugliett, K. (2022). P138 The Status of Food and Cooking Education in Maltese Primary Schools: An Exploratory Study. *Journal of Nutrition Education and Behavior*, 54(7). S83-S84. <https://www.sciencedirect.com/science/article/abs/pii/S1499404622003086>
- Preda, I. (2020). Public procurement in Romania: environment, stakeholders and critical success factors. *Sciendo*.

[https://www.researchgate.net/publication/343701874\\_Public\\_procurement\\_in\\_Romania\\_environment\\_stakeholders\\_and\\_critical\\_success\\_factors/fulltext/5f3b247ca6fdcccc43d0eb71/Public-procurement-in-Romania-environment-stakeholders-and-critical-success-factors.pdf](https://www.researchgate.net/publication/343701874_Public_procurement_in_Romania_environment_stakeholders_and_critical_success_factors/fulltext/5f3b247ca6fdcccc43d0eb71/Public-procurement-in-Romania-environment-stakeholders-and-critical-success-factors.pdf).

Republic of Slovenia. (2023). Slovenia observing first No Food Waste Day. *Republic of Slovenia*. <https://www.gov.si/en/news/2023-04-27-slovenia-observing-first-no-food-waste-day/>

Rescued Box. (2023). Homepage. *Rescued Box*. <https://rescuedbox.com/>

Rethink.Reduce, Reuse - VET LOVES FOOD. (2022). Homepage. *Rethink, Reduce, Reuse - VET LOVES FOOD*. <https://vetlovesfood.eu/>

Rivensco Consulting Ltd. (2023). Sustainable Education: Integrating Sustainability in Schools. *Rivensco Consulting Ltd*. <https://rivensco.net/blog/f/art-and-environment-environmental-education-through-art-1#3e6d0957-1a9f-4a69-907e-9c287fc2d59a>

Russel, H. (2016). How did Denmark become a leader in the food waste revolution? *The Guardian*. <https://www.theguardian.com/environment/2016/jul/13/how-did-denmark-become-a-leader-in-the-food-waste-revolution>

SAEMIA of the Republic of Latvia. (2010). Sustainable Development Strategy of Latvia until 2030. *SAEMIA of the Republic of Latvia*. [https://www.pkc.gov.lv/sites/default/files/inline-files/LIAS\\_2030\\_en\\_1.pdf](https://www.pkc.gov.lv/sites/default/files/inline-files/LIAS_2030_en_1.pdf)

SLU. (2020). Successful new course about food waste. *SLU*. <https://www.slu.se/en/ew-news/2020/12/successful-new-course-about-food-waste/>

SOLAS learning work. (2020). Homepage. *Government of Ireland*. <https://www.solas.ie/programmes/skills-to-compete/>

Suomen Gastronomien Seura ry. (2023). Homepage. *Suomen Gastronomien Seura ry*. <https://www.gastronomit.fi/>

TAFEL. (2023). Die Tafeln: Lebensmittel retten. *TAFEL*. <https://www.tafel.de/>

The European Network for the Promotion of Culinary and Proximity Tourism in Rural Areas. (2023). Courses. *The European Network for the Promotion of Culinary and Proximity Tourism in Rural Areas*. <https://www.gastronomytourism.eu/courses/>

The Netherlands Nutrition Centre. (2023). Homepage. *The Netherlands Nutrition Centre*.  
<https://www.voedingscentrum.nl/nl/service/english.aspx>

The Netherlands Nutrition Centre. (2023). Nationaal Programma Circulaire Economie 2023 - 2030. *The Netherlands Nutrition Centre*.  
<https://www.rijksoverheid.nl/onderwerpen/circulaire-economie/documenten/beleidsnotas/2023/02/03/nationaal-programma-circulaire-economie-2023-2030>

Tostivint, C; Östergren, K; Qvested, T; Soethoudt, H; Stenmarck, A; Svanes, E; O'Connor, C. (2016). Food waste quantification manual to monitor food waste amounts and progression. *FUSIONS*. <https://norsus.no/wp-content/uploads/fusions-food-waste-quantification-manual.pdf?v=1>

TripLegend. (2023). Proyectos Sostenibles en Grecia. *TripLegend*. <https://triplelegend.com/es/>

Typpö, J. (2023). Uusi vain netissä toimiva ”pilviravintola” toimittaa ruokaa Helsinkiin ja Espooseen – keittiömestarina Sara La Fountain. *Helsingin Sanomat*.  
<https://www.hs.fi/nyt/art-2000002921713.html>

UNEVOC. (2017). Greening Technical and Vocational Education and Training: A practical guide for institutions. *United Nations Educational, Scientific and Cultural Organization - UNESCO*. <https://unevoc.unesco.org/up/gtg.pdf>

United Nations Environmental Program – UNEP. (2016). Regulation No 13 of 21.09.2016 on the civil health, environmental and intercultural education - Bulgaria. *UNEP – LEAP*.  
<https://leap.unep.org/en/countries/bg/national-legislation/regulation-no-13-21092016-civil-health-environmental-and>

United Nations Environmental Programme – UNEP. (2021). Strategy to reduce food loss and food waste in the food supply chain "Respect food, respect the planet" Slovenia. *United Nations Environmental Programme – UNEP*.  
<https://leap.unep.org/en/countries/si/national-legislation/strategy-reduce-food-loss-and-food-waste-food-supply-chain>

United Nations Environmental Programme – UNEP. (2023). Strategy for the implementation of the school scheme in Slovenia for the period of six school years from 2023/2024 to 2028/2029. *United Nations Environmental Programme – UNEP*.

<https://leap.unep.org/en/countries/si/national-legislation/strategy-implementation-school-scheme-slovenia-period-six-school>

United Nations. (s. f.). Todos podemos ayudar a reducir la pérdida y el desperdicio de alimentos | Naciones Unidas. <https://www.un.org/es/cr%C3%B3nica-onu/todos-podemos-ayudar-reducir-la-p%C3%A9rdida-y-el-desperdicio-de-alimentos>

University of Zagreb. (2023). Waste management in agriculture (238607). *University of Zagreb*. <https://www.agr.unizg.hr/en/course/en/32/Waste+management+in+agriculture>

Van Leeuwen Catering. (2023). Conscious living buzzes! *Van Leeuwen Catering*. <https://cateringopmaat.nl/en/>

Vantuch, J.; Jelínková, D. (2022). Teachers and trainers in a changing world – Slovakia: Building up competences for inclusive, green and digitalized vocational education and training (VET). *Cedefop ReferNet thematic perspectives series*. [http://libserver.cedefop.europa.eu/vetelib/2022/teachers\\_and\\_trainers\\_in\\_a\\_changing\\_world\\_Slovakia\\_Cedefop\\_ReferNet.pdf](http://libserver.cedefop.europa.eu/vetelib/2022/teachers_and_trainers_in_a_changing_world_Slovakia_Cedefop_ReferNet.pdf)

VUPP. (2023). Metro Food. *VUPP*. <https://www.vupp.cz/cs/>

Waste No Network. (2023). Homepage. *Waste No Network*. <https://nowastenetwork.nl/?lang=en>

Weghmann, V. (2023). Waste Management in Europe. European Public Service Union. EPSU. [https://www.epsu.org/sites/default/files/article/files/Waste%20Management%20in%20Europe\\_EN.pdf](https://www.epsu.org/sites/default/files/article/files/Waste%20Management%20in%20Europe_EN.pdf)

WKO. (2023). Gastronomie –Vorarlberg. *WKO*. <https://www.wko.at/vlbg/tourismus-freizeitwirtschaft/gastronomie/start>

WKO. (2023). Kampagne gegen Lebensmittelverschwendung #EUHospitality #NoMoreFoodWaste. *WKO*. <https://www.wko.at/oe/tourismus-freizeitwirtschaft/gastronomie/kampagne-gegen-lebensmittelverschwendung>

WRAP. (2023). Reducing food waste, cutting carbon and protecting critical water resources. *WRAP*. <https://wrap.org.uk/taking-action/food-drink/initiatives/courtauld-commitment>

WWF Finland. (2023). Homepage. *WWF Finland*. <https://wwf.fi/>

YLE. (2023). Onko ruoka loppunut kesken lapsesi koulussa tai onko se luokattoman huonoa? Kerro meille, teemme juttua. *YLE*. <https://yle.fi/a/74-20058678>



Zero Food Waste. (2024). Zero Food Waste Presentation. *Zero Food Waste*.  
[https://imslux.lu/eng/nos-activites/pole-de-specialites/23\\_zero-food-waste#presentation](https://imslux.lu/eng/nos-activites/pole-de-specialites/23_zero-food-waste#presentation)

Zero Waste Austria. (2020). Food Waste Legislation and Action in Austria. *Zero Waste Austria*.  
[https://www.zerowasteaustria.at/uploads/5/8/6/4/58648241/eng\\_food\\_waste\\_in\\_austria\\_11\\_20\\_.pdf](https://www.zerowasteaustria.at/uploads/5/8/6/4/58648241/eng_food_waste_in_austria_11_20_.pdf)

Zero Waste Cyprus. (2023). Homepage. *Zero Waste Cyprus*. <https://zfwcy.org/>

Zero Waste Europe. (2020). Factsheet - France's law for fighting food waste Food Waste Prevention Legislation. *Zero Waste Europe*. [https://zerowasteurope.eu/wp-content/uploads/2020/11/zwe\\_11\\_2020\\_factsheet\\_france\\_en.pdf](https://zerowasteurope.eu/wp-content/uploads/2020/11/zwe_11_2020_factsheet_france_en.pdf)

Žičkienė, S; Kovierienė, A; Griščiūtė, V. (2020). Public attitude to food waste: the case of Lithuania. *E&Es – Economic and Environmental Studies*, 20(1). DOI: <https://doi.org/10.25167/ees.2020.53.2>