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European certification scheme of job profiles for the vegan food industry

Workpackage 4 Implementation of trainings, its quality assurance, certification and recognition

Task 4.5 European certification scheme for VFI Professionals

Lead Beneficiary ISEKI-Food Association (IFA)

Prepared by Luis Mayor (IFA)

Contributors Olav Aarna (EQA), Ahmet Budaklier (TAGEM), Joshua Bugeja (MCAST), Foteini Chrysanthopoulou (IFA), Goreti Botelho, Ivo Rodrigues, Rui Costa (IPC), Ilkem Demirkesen (TAGEM), Carmen de Vega (ACTAE)

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Foreword

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Project Coordinator:

Rui Costa | Polytechnic Institute of Coimbra (IPC), College of Agriculture (ESAC) | ruicosta@esac.pt

WP 4 Leader:

Joshua Bugeja | Malta College of Arts, Science and Technology | Joshua.Bugeja@mcast.edu.mt

Lead Beneficiary:

Luis Mayor | ISEKI-Food Association | luis.mayor@iseki-food.net

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Summary

A professional certification scheme has been developed for individuals working in the food industry. The main objectives of this scheme are to support food industry professionals to demonstrate their competence, which will facilitate advancements in their career, increase their salary, open-up possibilities of mobility, and promote lifelong learning. In order to align with industry standards and adapt to the evolving labor market demands, EQVEGAN has used ESCO's occupational profiles of the food industry to design its professional certification system. This ensures that the scheme remains up to date, promotes harmonization, and meets the expectations of the food industry. The scheme will undergo piloting and implementation phases after the project, being an important outcome to consider in the EQVEGAN exploitation strategy.

Content

Foreword	1
Summary	2
1. Context and rationale	5
1.1. What is professional certification?	5
1.2. Benefits of professional certification	6
1.2.1. Fostering lifelong learning	6
1.2.2. Enhancing the alignment between vocational training and labor market needs	7
1.2.3. Cross-border mobility	9
2. European certification of food industry professionals	11
2.1. Professional certification in Europe	11
2.1.1. Spain	12
2.1.2. Portugal	13
2.1.3. Türkiye	13
2.1.4. Estonia and Malta	13
2.1.5. Regulated Professions Database of the European Commission	14
2.1.6. Conclusion	14
2.2. ESCO and job profiles	15
2.2.1. What is ESCO	15
2.2.2. ESCO strategic framework	16
2.2.3. ESCO applications	16
2.2.4. ESCO update and EQVEGAN contribution	17
2.3. Recognition of qualifications and regulated professions	18
2.3.1. The Lisbon Convention	18
2.3.2. The EU Directive on regulated professions	19
2.3.3. Validation of non-formal and informal learning	20
3. EQVEGAN proposal for professional certification	22
3.1. Aims and scope	22
3.2. Overview of the procedure	23

3.3. Certified occupations	24
3.4. Requirements.....	24
3.4.1. Education benchmarks.....	24
3.4.2. Specific requirements	25
3.5. Application.....	25
3.6. Evaluation	25
Annex I. Food industry professional qualifications in Spain	27
Annex II. Food industry professional qualifications in Portugal.....	29
Annex III. Food industry professional qualifications in Türkiye	30
Annex IV. Food-related regulated professions available in the Regulated Professions Database	31
Annex V. EQVEGAN proposal for updating ESCO food-related occupational profiles	33
Annex VI. ESCO food production operator.....	35
Annex VII. ESCO food technician.....	37
Annex VIII. ESCO food technologist	39
Annex IX. Glossary.....	42

1. Context and rationale

1.1. What is professional certification?

Professional certification is a process that proves that a person has the knowledge, expertise, skills, and competences to perform a specific task or role in a profession¹. It provides employers with a trust element in the employee's competences and also guarantees professionals (employees) an independent endorsement that validates the possession of the competences established in a structured and impartial certification scheme.

Notice that in the literature, much definitions exists for professions and occupations. This is the case of [ESCO](#), which refers to occupations as a broad field which inside contains a group classified as professionals. This means that by occupation refers to a specific job or role that an individual holds within the labor market. On the other hand, a professional represents a specific type of occupation that requires specialized knowledge, expertise, and a higher level of formal education or training. For the purpose of this report, professions have the same meaning as occupations in [ESCO](#).

Professional certification delivers benefits to several stakeholders, from which one can consider the employees and employers as the main two groups.

The key benefits of professional certification to employees include:

- Increased confidence and credibility: employees feel a sense of accomplishment and confidence in their abilities, as certification enhances their credibility with clients, colleagues, and employers.
- Career advancement: Professional certification can be a key factor in career advancement, as it can demonstrate an employee's commitment to their profession and ongoing professional development.
- Improved job opportunities: employees become more marketable to employers, as the certification demonstrates that they have met a certain level of expertise and proficiency in their field. This can lead to more job opportunities in the country of origin or abroad, promotions, and salary increases.

To employers the key benefits of professional certification²³ include:

- Improved employee satisfaction, performance, and productivity in the respective job.
- Increased company credibility and reputation to prospective customers, demonstrating the organization's commitment to quality and expertise in their field.
- Enhanced recruitment and retention to attract and retain top-talented employees, including those coming from other countries.

¹ Nelson, C.R., Bowers, K., Lyndall, J.L., Munro, J. and Stanley, J.T. (2017), *Professional certification in ecological restoration: improving the practice and the profession*. *Restor Ecol*, 25: 4-7. Available [here](#)

² EAHEA (2023). *Professional Certification*. Available [here](#).

³ Clarion College of Businesses and Technology (2023). *5 proven benefits of Professional Certification*. Available [here](#).

- Competitive advantage in the marketplace that helps the employers stand out from competitors and win business by demonstrating their commitment to excellence.

Since certification contributes to the overall professionalization of a field, it presents benefits to society. It promotes consistency, accountability, and a commitment to high standards of practice. Society benefits from having qualified professionals who adhere to ethical guidelines, contribute to the advancement of knowledge, and deliver services that meet the needs of individuals and communities. It provides a level of assurance that the services consumers and businesses receive will be of high quality and delivered by individuals who possess the necessary expertise.

Certification of professionals is done by professional associations (or by Orders) usually as a basis for licensing professionals, establishing legal frameworks, and ensuring that practitioners meet minimum standards of competence and ethical conduct. It helps these bodies regulate the profession, ensure public safety, prevent asymmetry of information, and maintain the integrity and reputation of the field.

Education and training providers also profit from certification since it provides a clear benchmark for curricula and training design. It helps institutions align their programs and curricula with industry standards, ensuring that graduates are equipped with the knowledge and skills necessary for professional practice. Certification can also guide the development of continuing education and professional development programs.

1.2. Benefits of professional certification

1.2.1. Fostering lifelong learning

Learning takes place throughout a person's lifetime in a variety of situations rather than only during the years spent in school. The European Union has supported the concept of [lifelong learning](#) by organizing collaboration between Member States on training and formal, non-formal, and informal education through its strategic framework for European cooperation in education and training.

Lifelong learning can occur in training and formal education, non-formal education, and informal education. Learning occurs at various levels during formal education, including in early childhood, school-based compulsory education, vocational education and training, tertiary education, and adult education. Work-based learning, either enterprise-based training or public labor market training also takes place and, in fact, make up the majority of non-formal education. In addition, experience is gained via working in various sorts of organizations and participating in specific tasks like research and development. Informal learning also occurs in less formal settings like interest groups, families, and communities⁴.

⁴ European Parliamentary Research Service (2023). *Lifelong Learning in the EU*. Available [here](#).

A well-trained and skilled workforce is more productive and innovative, leading to higher competitiveness for businesses and the economy as a whole. Lifelong learning contributes to a more knowledgeable and adaptable workforce, capable of driving growth and meeting the challenges of the global market. Lifelong learning not only benefits professionals in terms of career opportunities but also contributes to personal growth, increased self-confidence, and overall well-being. Engaging in continuous learning helps individuals stay intellectually stimulated and socially connected, which can lead to a higher quality of life. By fostering lifelong learning and improving the match between professional training and labor market needs, opportunities for underrepresented or disadvantaged groups can be increased. This, in turn, can lead to a more diverse and inclusive labor market, which benefits society as a whole. Lifelong learning also plays a crucial role in promoting social cohesion and sustainable development by empowering individuals to be active and informed citizens. It helps people understand complex global issues, engage in community development, and contribute to a more equitable and sustainable future⁵.

The importance of lifelong learning has been emphasized by EU Commission, who have urged Member States to promote more than just the "right occupational skills" and to take into account other factors like an entrepreneurial mindset, creativity, critical thinking, respect for fundamental rights and values, an awareness of sustainability, and involvement in social and democratic life. The Erasmus funding program's budget has been regularly supported by the European Parliament as a teaching resource that aids participants in developing these abilities.

1.2.2. Enhancing the alignment between vocational training and labor market needs

Enhancing the alignment between professional training and labor market needs refers to the process of ensuring that the skills and knowledge being taught in vocational or professional training programs match the current and future needs of the labor market. It involves creating a system that allows the labor market to communicate its needs and requirements to training providers, who then adapt their programs to provide students with the relevant skills and knowledge. The goal of enhancing the alignment between professional training and labor market needs is to reduce skills gaps and mismatches that can result in unemployment, underemployment, and a shortage of skilled workers in certain industries. By ensuring that training programs are designed to meet the needs of the labor market, individual learners can learn the skills that offer the best prospects on the job market in terms of, for instance, wage growth, employment, and job quality. The process of enhancing the alignment between professional training and labor market needs involves collaboration between training providers, employers, industry associations, and government agencies. It requires ongoing monitoring and

⁵ European Commission (2020). *European Skills Agenda for sustainable competitiveness, social fairness, and resilience*. Available [here](#).

analysis of labor market trends and demands, as well as a willingness to adapt training programs to meet changing needs⁶.

Acquiring new skills and knowledge throughout one's career enhances employability and opens up opportunities for career advancement. Employers value professionals who demonstrate a dedication to lifelong learning in today's quickly changing work environment. Individuals can stay relevant and adapt to changing industry needs by actively participating in lifelong learning.

Addressing skill shortages and mismatches is a critical component of establishing improved alignment between professional training and labor market needs. The gap between the abilities possessed by professionals and the skills required by businesses can be bridged by identifying in-demand skills and providing tailored training programs. As a result, companies can discover the proper people to match their changing needs, which adds to the overall health and growth of industries. Improving the match between professional training and labor market demands has broader societal implications. It allows people to fully participate in society and democracy by providing them with the skills they need to work. This ensures that no one is left behind and that the economy recovers in a socially equitable and fair manner. Furthermore, a workforce with in-demand skills plays a critical role in supporting long-term, sustainable growth, stimulating innovation, and enhancing competitiveness of businesses. When professionals have the abilities required to drive industry innovations, they can help to generate new ideas, products, and services, ultimately increasing economic production and success.

By aligning training programs with industry requirements, employers can find qualified professionals more easily, while employees can access relevant training that leads to better job prospects⁷.

On the other hand, more than 75 % of businesses in the EU declare it is difficult to find workers with the required skills, and the most recent data from Eurostat shows that only 37 percent of adults regularly attend training⁸. Therefore, the Member States have already provided their national commitment to achieve the EU 2030 social aim that at least 60% of adults should participate in training each year in order to promote lifelong learning, in order to meet the desired employment rate of at least 78% by 2030, this is also crucial. The Commission suggested revitalizing lifelong learning through the European Year of Skills 2023 in collaboration with the European Parliament, Member States, social partners, public and private employment services, chambers of commerce and industry, education, and training providers, as well as workers and businesses.

⁶ OECD (2009). *Learning for jobs: OECD policy review of vocational education and training. Chapter two: meeting labour market needs*. Available [here](#).

⁷ Del Rio, C.; Angelova, M. (2018). *Opinion of the European Economic and Social Committee on the 'Future of work — acquiring of appropriate knowledge and skills to meet the needs of future jobs'*. Official Journal of the European Union, C 237/8. Available [here](#).

⁸ European Commission (2022). *Proposal for a decision of the European Parliament and of the Council on a Year of Skills 2023*. 2022/0326 (COD). Available [here](#).

1.2.3. Cross-border mobility

Certification of the labor force is considered by some as an essential aspect of labor mobility in Europe⁹. The certification process involves the recognition of the qualifications, knowledge, and skills of workers across European Union (EU) member states, enabling them to work and move freely within the EU. Several in place policies and tools that frame the certification of professionals in the EU are briefly summarized below.

One is the European Qualifications Framework (EQF¹⁰) which provides a common reference framework for comparing and recognizing qualifications across EU member states and other adhering countries to the [European Higher Education Area](#) (49 countries in total). EQF allows for the translation of qualifications and competences from one country to another, making it easier for employers and education providers to assess individual's qualifications and skills.

Additionally, the European Credit Transfer and Accumulation System ([ECTS](#)) enables students to transfer their credits from one institution to another, making it easier for them to continue their education or training in another EU member state.

There are also several EU initiatives and programs aimed at promoting labor mobility and supporting workers' certification, such as [ESCO](#), the European Employment Services ([EURES](#)) and the [European Skills Agenda](#). These initiatives respectively provide information and assistance to workers and employers on job vacancies, training opportunities, and recognition of qualifications and skills.

Overall, the certification of the labor force in Europe is crucial to facilitate the free movement of workers, promoting economic growth and competitiveness, and supporting individual career development and lifelong learning.

The annual report on intra-EU labor mobility 2022¹¹ gives an update on recent developments of intra-EU mobility, including how this compares with the role of third country nationals in the EU labor market. Specific chapters concerning frontier workers (cross-border commuters) and an analysis linking occupations and mobility are also included. In looking at the actual mobility this report also complements last years' [Special Eurobarometer on Attitudes towards labor mobility](#). The Eurobarometer looked into motivations and hindrances for mobility in all Member States.

The report differentiates between EU citizens as movers inside EU, and third country nationals as movers inside EU. The most common occupations among movers on an EU level were elementary occupations (18%), professionals (18%) and service and sales workers (16%). Both movers (EU citizens) and third-country nationals were overrepresented relative to nationals in

⁹ Directorate-General for Internal Policies, European Commission (2019). *Labour mobility and recognition in the regulated professions*. Available [here](#).

¹⁰ Council recommendation on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03). Available [here](#).

¹¹ European Commission, Directorate-General for Employment, Social Affairs, and Inclusion (2022). *Annual Report on Intra-EU Labour Mobility 2022*. Available [here](#).

elementary occupations and craft and related trades. Relative to nationals, EU movers were most overrepresented in construction and accommodation and food services.

The contribution of EU movers to total employment is highest among occupations requiring low-to-medium skills, such as cleaners and helpers (10% of total employment; 559 000 movers), laborers in mining, construction, manufacturing, and transport (8%; 334 000), and building and related trades workers (7%; 445 000). The largest sector of work for movers was manufacturing (17%).

There are clear signs of a general shift towards professionals among EU movers from 2016 to 2021. This has been accompanied by a process of skill-based polarization over the same period, represented by a decreasing share of medium skilled mobile workers. The 2016-2021 period also saw a significant decrease in the share of mobile workers with a medium level of education and an increase in the share of those with a high or low education level. Additionally, EU movers were more likely to be overqualified for low skill jobs compared to the local population.

In 2021, the most popular occupations among EU movers decreased at the EU level across all population groups, such as cleaners and helpers (9% of all EU movers), building and related trades workers (7%), personal service workers (6%), sales workers (6%), and laborers in mining, construction, manufacturing, and transport (5%). Additionally, the size of the mobile labor force relative to total employment is relatively minor.

Based on limited data availability, it appears that only a few prevalent occupations among EU movers indicate signs of a potential labor shortage, with science and engineering professionals being the most-in-demand among the five Member States (France, Germany, Italy Netherlands, and Spain) studied in further detail.

In Italy, France and the Netherlands, signs of labor shortages are mainly indicated by occupations requiring low-to-medium skills: e.g., numerical and material recording clerks; laborers in mining, construction, manufacturing, and transport; and metal, machinery, and related trades workers.

In contrast, many high-skilled occupations in Germany and Spain, such as business and administration professionals and science and engineering associate professionals, indicate signs of labor shortages.

The overall small share of EU movers relative to nationals suggests that intra-EU labor mobility is currently unable to significantly mitigate potential labor shortages at the occupational level in the short-term.

The report does not refer that the lack of certification is hindering mobility. Apparently, professionals are still moving to where they are needed even though without certification of job profiles in some cases. Obviously, qualified professionals at tertiary levels do profit from certification of qualifications that became widely facilitated worldwide by the Lisbon recognition convention (see section 2.3.1). However, this is not the case of lower skilled professionals.

Nevertheless, based on the preceding information, it is suggested that the implementation of a shared European tool to recognize the knowledge, skills, and competences of food professionals

could enhance, at least partially, the mobility of the workforce within the food industry across EU countries. Certification, at the least, would improve the efficiency of recruitment, making it more simple, fit to purpose to needs and trustable. This tool should encompass occupations that require low, medium skills and high skills, ensuring coverage across all professional levels.

2. European certification of food industry professionals

2.1. Professional certification in Europe

The food industry is a vast and diverse sector that encompasses a wide range of occupations and specializations, from food scientists and food industry operators to chefs and hospitality professionals. For this industry, the acquisition of professional certification when existing, whether regulated in the originating country or otherwise, is essential for individuals who want to make a meaningful impact. The benefits of a professional certification are multifaceted. It can help individuals advance in their careers by demonstrating their expertise and knowledge in a particular field. Apart from knowledge, a professional certification provides credibility and reputation in the food industry. The demonstration that an individual has invested time and effort in acquiring specialized knowledge and skills, shows that they are committed to their profession. This can be particularly important in this industry where safety and hygiene are critical. Moreover, such certification increases efficiency and security. This ensures that employees holding a certification understand proper food handling and preparation techniques, reducing the risk of foodborne illness outbreaks. Most importantly though, it ensures that businesses within the food industry comply with industry regulations and standards. This is crucial when considering that safety and hygiene are critical and can help to prevent legal liabilities.

Ideally such certifications are to be recognized not only in the EU but globally, which can be particularly beneficial for individuals and businesses that operate in multiple countries.

The overarching EU Directive 2005/36¹² is in place to aid mobility between Member States of the EU, EEA, and Switzerland. This directive applies to regulated professions including sectoral and general systems and works on the principle that a qualified professional in one Member State is qualified to exercise the same profession in another Member State.

There is a great need for professional recognition since the requirements for the same profession in different countries may vary. In the case of significant differences there is the possibility to implement compensation mechanisms, for example, an aptitude test or an

¹² European Union (2005). Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. Official Journal of the European Union L 255/22. Available [here](#).

adaptation period¹³, which enables an assessment of the knowledge, skills, and abilities of the applicant for working in a regulated profession.

The situation of food professional certifications in Europe is diverse. As examples, the cases of Spain, Portugal, Türkiye, Estonia, and Malta are described here.

2.1.1. Spain

Spain is one of the largest food producers in Europe, with a diverse range of products, from olive oil and wine to seafood and meat. As such, the food industry is a significant contributor to the Spanish economy and a major employer, accounting for over 500.000 jobs¹⁴. To work in the food industry in Spain, professionals require specific qualifications and training, which are recognized by industry associations and government bodies.

Spain holds a large number (30) of courses across all EQF levels related to the food industry, as examples the Food Science and Technology degree, Master in Food Science, Master in Food Quality and Safety. With reference to the [EU regulated professions database](#), [oenologist](#), [agricultural engineer](#), [winemaking technician](#), and [viticulture technician](#) are all the regulated food professions in Spain.

Other tools for professional recognition in Spain are the [professional qualifications](#), defined as a set of competence standards relevant for employment that may be acquired through modular training or other types of training, including professional experience¹⁵.

These qualifications allow to respond to relevant occupations and jobs, with value and recognition in the labor market, but in no case regulate the profession or professional activity. They do not constitute a training plan, nor are they taught in any center, but are the basis for drawing up the training offer leading to the award of vocational training diplomas and certificates of professionalism.

The national institute of qualifications ([INCUAL](#)) maintains a [national catalog of professional qualifications](#), which includes the professional family of [Food Industries](#) with a wide range of productive activities, grouped into 3 levels that are related to the EQF levels: 2 qualifications at level 1 (EQF 2-3), 20 at Level 2 (EQF 4) and 8 at Level 3 (EQF 5). Examples of these qualifications are [auxiliary operations on food industry](#) (EQF 2.3), [industrial production of canned vegetables](#) (EQF 4) and [wine technology](#) (EQF5). A detailed list of the Spanish food-related qualifications can be found in the Annex I of this document.

¹³ European Commission (2020). Report from the Commission on the implementation of certain new elements introduced by Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System ('the IMI Regulation'). Available [here](#).

¹⁴ FIAB, Randstad Research (2021). Informe de Empleo 2021 - Industria de Alimentación y Bebidas. Available [here](#).

¹⁵ Spanish Government (2003). Real Decreto 1128/2003, de 5 de septiembre, por el que se regula el Catálogo Nacional de Cualificaciones Profesionales. BOE-A-2003-17588. Available [here](#).

2.1.2. Portugal

Portugal retains 252 regulated professions, with one of them, directly related to food technology, in the European regulated professions database. This is referred to as the [Food Technical Engineer](#), backed by the Order of Technical Engineers as the competent authority.

Food Technical Engineers are professionals who have expertise in food science and technology, as well as in the design and management of food production processes. Moreover, they are responsible for ensuring that food products are safe, of high quality, and meet all relevant regulatory requirements. They work in a variety of settings, including food processing plants, research and development laboratories, and government regulatory agencies.

To become a Food Technical Engineer in Portugal, one must obtain a degree in Food Engineering or a related field from a recognized institution. After completing their degree, individuals must then complete a period of practical training, followed by a professional exam and registration with the relevant regulatory body.

Overall, the Food Technical Engineer profession is an important one in Portugal's food industry, as these professionals play a critical role in ensuring the safety, quality, and regulatory compliance of food products.

Similar to Spain and complementing the regulated profession, Portugal also offers 6 food-related professional qualifications at various EQF levels (see Annex II).

2.1.3. Türkiye

Professions in Türkiye such as medical doctors, dentists, veterinarians and pharmacists are regulated and the requirements to pursue a regulated profession are defined in different laws. The [Turkish Council of Higher Education](#) adopted a Regulation on the Harmonization of the Minimum Training Requirements¹⁶ for the seven regulated professions stipulated by the [EU-Directive 2013/55](#). The General System under the European Directive 2013/55 may be important as well for other regulated professions that are regulated in the EU member states and those that require a Vocational Qualifications Authority certificate to practice. Similar to Spain and Portugal, in Türkiye there are 650 national vocational qualifications, 22 of them directly related to the food industry (see Annex III). These qualifications can be found at [portal of Vocational Qualifications Authority of Türkiye](#). Annex III shows a list of these food-related qualifications, all of them EQF level 4.

2.1.4. Estonia and Malta

In Estonia, a country with 1.3 million inhabitants, there are no food industry occupations or professions that are included in the list of regulated professions. This leads to a situation whereby food industry employers, from a qualification point of view, are relatively free in hiring

¹⁶ European Training Foundation (2021). National qualifications framework - . Available [here](#).

people. At the same time employers are actively involved in curriculum design and development committees of VET and HE institutions.

Similar to Estonia, Malta, a country with 500,000 inhabitants, does not have any food industry related occupations or professions that are included in the list of regulated professions. Those interested to work within this industry usually follow a course offered either by the Institute of Tourism Studies ([ITS](#)) or the Malta College of Arts, Science and Technology ([MCAST](#)).

MCAST offers one course at EQF Level 4 related to food technology. This course offers learners the possibility to work as food analysts, food technologists, food product development technologists, food production supervisors or food quality assurance technicians. ITS offers various courses from EQF Level 3 to EQF Level 6 in relation to the food industry. This varies from the Level 3, 60 ECTS certificate in Food Preparation & Service to the Level 6, 240 ECTS Bachelor in Culinary Arts (Hons).

Typically, Maltese employers will set ITS and MCAST courses as prerequisites in order to be able to apply for jobs related to the food industry.

2.1.5. Regulated Professions Database of the European Commission

The [Regulated Professions Database](#) of the European Commission contains information on regulated professions, statistics on migrating professionals, contact points and competent authorities, as provided by EU Member States, EEA countries, the UK and Switzerland.

Looking at the Regulated professions database, we find the following food-related professions in Europe: food inspector, food technologist/chemist and producer/distributor of animal foodstuffs. These professions are regulated only in some countries, for example, [food technologist/chemist](#) is only stipulated as a regulated profession in Switzerland, Germany, Iceland, Italy, and Hungary. There are a very limited number of regulated professions, and a limited number of countries that recognize a specific regulated profession. The lack of homogeneity of regulation hinders the mobility of these professionals.

A list of food-related regulated professions, the country where such professions are regulated, and other relevant information is included in Annex IV.

2.1.6. Conclusion

Based on the overview of the regulated professions of each country we can observe a situation whereby there is undeniable discrepancy between EU countries in relation to the recognition of the regulated professions. This can lead to a situation whereby professionals within the industry may find it hard to contribute with their skills and knowledge in EU countries other than the one where the certification was established. To this end it might be worthwhile to consider a new set up based on the ESCO profiles. ESCO profiles provide a standardized and structured way of

describing occupations, and a system based on ESCO profiles would have the aims to facilitate labor market mobility and improve workforce development.

2.2. ESCO and job profiles

2.2.1. What is ESCO

[ESCO](#) is the multilingual classification of European skills/competences, qualifications and occupations. ESCO is part of the Europe 2020 strategy. It is a European Commission initiative, run by Directorate General Employment, Social Affairs and Inclusion ([DG EMPL](#)). It is available in an [online portal](#) and can be consulted free of charge.

The aim of ESCO is to support job mobility across Europe and therefore a more integrated and efficient labor market, by offering a “common language” on skills/competences, qualifications and occupations that can be used by different stakeholders on employment and education and training topics.

ESCO works as a dictionary, describing, identifying and classifying occupations and skills relevant for the EU labor market and education and training. Those concepts and the relationships between them can be understood by electronic systems, which allows different online platforms to use ESCO for services like matching job seekers to jobs on the basis of their skills, suggesting training to people who want to reskill or upskill, etc.

ESCO provides descriptions of 3008 occupations and 13.890 skills linked to these occupations, translated into 28 languages (all official EU languages plus Icelandic, Norwegian, Ukrainian, and Arabic).



Figure 1: The Current Landscape. What is ESCO? Source [ESCO](#)

2.2.2. ESCO strategic framework¹⁷

The European Commission developed ESCO in coherence with other initiatives and instruments at European and national level. In fact, ESCO needs to work complementarily with other instruments for enhancing interoperability in the labor market and in education and training. These include in particular:

- Classification systems, controlled vocabularies and frameworks such as national occupational classifications, International Standard Classification of Occupations ([ISCO](#)), the European Qualifications Framework ([EQF](#)), or the eCompetence Framework ([e-CF](#));
- Databases with complementary information such as national qualification databases or the [Regulated Professions Database of the European Commission](#);
- Technical or syntactical standards such as [Europass](#), [HR-XML](#) or [schema.org](#)
- Legislation such as the Directive 2005/36/EC on the recognition of professional qualifications¹⁸;
- Tools and services that help people to develop their careers, such as [EURES](#), national job portals and career guidance tools.

[DG EMPL](#) is managing the development and updating of the ESCO classification in collaboration with stakeholders and with the European Centre for the Development of Vocational Training ([CEDEFOP](#)). Key stakeholders include employers organizations, trade unions, employment services, education institutions, training organizations, job portals, sector skills councils, statistical organizations and various government bodies.

ESCO is structured in three pillars:

- [occupations](#);
- [skills and competences](#);
- [qualifications](#).

The three pillars of ESCO are interlinked to make visible:

- which knowledge, skills and competences terms are useful to describe jobs in a specific occupation,
- which knowledge, skills and competences terms are useful to describe learning outcomes of a qualification,
- which qualifications Member States consider relevant in the context of a specific occupation.

2.2.3. ESCO applications

¹⁷ European Commission (2016). *ESCO strategic framework: vision, mission, position statement, added value and guiding principles*. Available [here](#).

¹⁸ European Parliament (2005). *DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications*. Official Journal of the European Union L 255/22. Available [here](#).

One of ESCO's main missions is to build stronger bridges between the world of education and training and the world of work, contributing to reducing skill mismatches and supporting the better functioning of the labor market. The vision behind ESCO is the provision of a common reference language that could support transparency, translation, comparison, identification, and analysis of the content of a qualification, thus helping to indicate how those relate to the skills and occupations needed across occupations and sectors. ESCO does so in multiple ways.

A labor market terminology that can help understanding which occupations and skills are related to a particular qualification allows learners, job seekers and employers to best use this information: ESCO fills this need by providing an updated, evidence-based, and multilingual skills and occupation vocabulary.

ESCO supports education and training systems in the shift to learning outcomes that better serve the labor market needs. Organizations that provide data on qualifications can use ESCO to annotate learning outcomes descriptions with skills terminology, integrating knowledge, skills and competence concepts that correspond to the learning outcomes description of the qualification. This helps learning institutions to express their learning outcomes in a way that facilitates the understanding of their qualifications by labor market actors and to attract learners from within and across borders.

In summary, ESCO is useful in job search, in successful job matching based on skills and competences, in career management and in labor market analyses.

EQVEGAN incorporates ESCO food occupational profiles in its professional certification scheme for the following reasons:

- ESCO occupational profiles serve as the benchmark for aligning job profiles and titles across Europe, ensuring consistency and coherence.
- These profiles provide a thorough and detailed list of knowledge, skills, and competences using standardized terminology.
- The European Commission and key stakeholders regularly update ESCO job profiles. This ongoing effort aims to address skill mismatches and promote a more efficient labor market.

By considering ESCO's food occupational profiles, EQVEGAN ensures that its professional certification system meets food industry standards, promotes harmonization, and keeps updated on evolving labor market needs.

2.2.4. ESCO update and EQVEGAN contribution

ESCO system is in a continuous process of improvement, supported by employers organizations, trade unions, education institutions, government bodies and EC funded projects. The EQVEGAN project has contributed with the following proposals which will be implemented in 2024:

- The occupation “food and vegetable preserver” will be eliminated due to its redundancy with other occupations;

- 3 new knowledge topics will be added: food ethics, food fraud, food authentication techniques;
- 3 new skills will be added: manage ethics issues in the food industry, ensure responsible sourcing in food supply chains, promote ethical eating;
- Knowledge and skills already present in the ESCO database but associated to different occupations will be updated:
 - Food production operator: 13 knowledge topics and 8 skills
 - Food technician: 13 new knowledge topics and 10 skills
 - Food technologist: 17 new knowledge topics and 18 skills

Annex V presents in a table all the changes proposed to ESCO for the occupational profiles of food production operator, food technician and food technologist.

2.3. Recognition of qualifications and regulated professions

This section describes major legal and regulatory frameworks concerning academic and professional recognition in the European Union. These regulations must be considered when alternative tools to academic and professional recognition are devised.

2.3.1. The Lisbon Convention

The most important framework is the Convention on the Recognition of Qualifications Concerning Higher Education in the European Region, usually referred as the Lisbon Recognition Convention ([LRC](#)), jointly drafted by the Council of Europe and UNESCO¹⁹. The LRC was adopted at a meeting of national representatives in Lisbon on 8 - 11 April 1997 and until now has been signed by 55 European countries. The LRC is the key legal instrument for recognition of qualifications across UNESCO's Europe and North America Region.

The LRC aims to ensure that holders of a qualification from a signatory country can have that qualification recognized in another. The key points of the LRC are:

- Holders of qualifications issued in one country shall have adequate access to an assessment of these qualifications in another country;
- No discrimination shall be made in this respect on any ground such as the applicant's gender, race, color, disability, language, religion, political opinion, national, ethnic or social origin;
- The responsibility to demonstrate that an application does not fulfill the relevant requirements lies with the body undertaking the assessment;
- Each country shall recognise qualifications – whether for access to higher education, for periods of study or for higher education degrees – as similar to the corresponding

¹⁹ Council of Europe (1997). *Convention on the Recognition of Qualifications concerning Higher Education in the European Region*. *European Treaty Series - No. 165*. Available [here](#).

qualifications in its own system unless it can show that there are substantial differences between its own qualifications and the qualifications for which recognition is sought.

Recognition of a higher education qualification issued in another country shall have one or more of the following consequences:

- Access to further higher education studies, including relevant examinations and preparations for the doctorate, on the same conditions as candidates from the country in which recognition is sought;
- The use of an academic title, subject to the laws and regulations of the country in which recognition is sought;
- In addition, recognition may facilitate access to the labor market²⁰.

The explanatory report²¹ to the LRC can serve as a comprehensive source of explanations and comments to the articles of the convention.

The LRC text dates back to 1997. Obviously, developments within higher education since then are not reflected in the LRC text. One of the most notable changes in higher education is the paradigm shift from a focus on learning inputs to outputs in terms of learning outcomes. Another important development is implementation of national and overarching qualifications frameworks in Europe and globally. In this respect the Recommendation on the Use of Qualifications Frameworks in the Recognition of Foreign Qualifications²² has been adopted providing recommendations for using national and overarching qualifications frameworks to simplify recognition of foreign qualifications. The Recommendation also introduces five key elements (attributes) of a qualification in recognition: level, learning outcomes, quality, workload, and profile.

Although LRC is a successful convention and tackles important issues related to professionals' mobility, it is not fine grained enough to deal with the issue that the proposal of EQVEGAN certification is aimed at. It deals with qualifications but not with certified professionals.

2.3.2. The EU Directive on regulated professions

Any citizen of a Member State of the European Union (EU), European Economic Area (EEA) or Switzerland has the right to work, to seek work, to set up business or to provide services in any other Member State.

²⁰ Access to regulated professions is not covered by the Convention

²¹ Council of Europe (1997). *Explanatory Report to the Convention on the Recognition of Qualifications concerning Higher Education in the European Region*. European Treaty Series - No. 165. Available [here](#).

²² Unesco and the council of Europe (2013). *Subsidiary text to the convention: "Recommendations on the use of qualifications frameworks in the recognition of foreign qualifications"*. DGII/EDU/HE (2012) 14 Rev 09 final. Available [here](#).

The Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013²³ is in place to aid mobility between Member States of the EU, EEA, and Switzerland. It provides for automatic recognition for a limited number of professions based on harmonized minimum training requirements (sectoral professions), and a general system for the recognition of evidence of training and automatic recognition of professional experience. The Directive works on the principle that a qualified professional in one Member State is qualified to exercise the same profession in another Member State.

The basic principle of the directive is the recognition of a foreign qualification, but every host country has the right to implement the necessary regulations and procedures to reach that goal. There is a great need for professional recognition since the requirements for the same profession in different countries may vary. In the case of significant differences there is the possibility to implement compensation mechanisms, for example, an aptitude test or an adaptation period, which enable an assessment of the knowledge, skills, and abilities of the applicant for working in a regulated profession.

In order to work in a regulated profession with foreign qualifications one must apply for the recognition of these qualifications by a competent authority. Information about regulated professions, competent authorities, and application procedures, etc., in a certain country is provided by contact points.

2.3.3. Validation of non-formal and informal learning

The Council of European Union Recommendation on validation of non-formal and informal learning²⁴ (VNFIL) is meant to harmonize the efforts of the Member-States for developing a robust and consistent system of VNFIL in the European Union, aimed to support the individuals getting recognition of their competences, irrespective of the way they acquired them.

Implementation of VNFIL primary objective is to recognize and appreciate learning attained through non-formal education channels, while also granting individuals avenues to pursue additional education, training, or employment opportunities based on their existing knowledge and skills.

The EU recommendation on VNFIL provides the following elements in arrangements for the VNFIL, whilst allowing each individual to take advantage of any of these, either separately or in combination, in accordance with his/her needs:

- a) identification of an individual's learning outcomes acquired through non-formal and informal learning;

²³ European Parliament and Council of Europe (2013). Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System. Available [here](#).

²⁴ European Union (2012). Council recommendation of 20 December 2012 on the validation of non-formal and informal learning. Official Journal of the European Union. Available [here](#).

- b) documentation of an individual's learning outcomes acquired through non-formal and informal learning;
- c) assessment of an individual's learning outcomes acquired through non-formal and informal learning;
- d) certification of the results of the assessment of an individual's learning outcomes acquired through non-formal and informal learning in the form of a qualification, or credits leading to a qualification, or in another form, as appropriate.

The Recommendation suggests the following principles in arrangements for the VNFIL, whilst taking into consideration national, regional and/or local, as well as sectoral needs and characteristics:

- a) the validation arrangements are linked to national qualifications frameworks and are in line with the European Qualifications Framework;
- b) information and guidance on the benefits of, and opportunities for validation, as well as on the relevant procedures, are available to individuals and organizations;
- c) disadvantaged groups, including individuals who are unemployed and those at risk of unemployment, are particularly likely to benefit from the validation arrangements, since validation can increase their participation in lifelong learning and their access to the labor market;
- d) individuals who are unemployed or at risk of unemployment have the opportunity, in accordance with national legislation and specificities, to undergo a 'skills audit' aimed at identifying their knowledge, skills and competences within a reasonable period of time, ideally within six months of an identified need;
- e) the VNFIL is supported by appropriate guidance and counselling and is readily accessible;
- f) transparent quality assurance measures in line with existing quality assurance frameworks are in place that support reliable, valid and credible assessment methodologies and tools;
- g) provision is made for the development of the professional competences of staff involved in the validation process across all relevant sectors;
- h) qualifications or, where applicable, parts of qualifications obtained by means of the validation of non-formal and informal learning experiences comply with agreed standards that are either the same as, or equivalent to, the standards for qualifications obtained through formal education programs;
- i) the use of Union transparency tools, such as the Europass framework and Youthpass, is promoted in order to facilitate the documentation of learning outcomes;
- j) synergies exist between validation arrangements and credit systems applicable in the formal education and training system, such as ECTS and ECVET.

The recommendation suggests promoting the involvement in the development and implementation of the elements and principles of VNFIL by all relevant stakeholders, such as employers, trade unions, chambers of industry, commerce and skilled crafts, national entities involved in the process of recognition of professional qualifications, employment services, youth organizations, youth workers, education and training providers, and civil society organizations. To foster participation in this process:

- a) employers, youth organizations and civil society organizations should promote and facilitate the identification and documentation of learning outcomes acquired at work or in voluntary activities, using relevant Union transparency tools such as those developed under the Europass framework and Youthpass;
- b) education and training providers should facilitate access to formal education and training on the basis of learning outcomes acquired in non-formal and informal settings and, if appropriate and possible, award exemptions and/or credits for relevant learning outcomes acquired in such settings.

Coordination on validation arrangements between stakeholders in the education, training, employment, and youth sectors, as well as between those in other relevant policy areas should be promoted.

The Recommendation is implemented in the EU using the Open Coordination Method though the recommendation is not binding for the EU member states.

EQVEGAN includes several stakeholders (qualifications agency, association of food industry, association of professionals) and education and training providers on the definition of certification. The proposed certification respects the principles of VNFIL.

3. EQVEGAN proposal for professional certification

3.1. Aims and scope

The EQVEGAN proposal for professional certification seeks to achieve the following objectives:

- Establish a comprehensive professional recognition program in the food sector at EU level, ensuring standardized certification for individuals.
- Consider different types of training (formal, non-formal and informal training) for the acquisition of knowledge, skills, and competences.
- Facilitate the transnational mobility of food professionals within Europe and beyond, by promoting recognition of their competences across borders.
- Encourage lifelong learning by emphasizing the importance of continuous skill development and ongoing educational activities to maintain the certification.
- Indirectly, by promoting the adoption of ESCO job profiles within the certification scheme, EQVEGAN aims to encourage educational and training institutions to incorporate the knowledge, skills, and competences of these profiles into their curricula design, thus fostering better alignment between the training offer and the skill requirements in the food sector.

By focusing on these goals, the EQVEGAN proposal aims to elevate the standards of professionalism in the food industry while also fostering mobility, ongoing education, and improved collaboration between education and training institutions and industry needs.

The certification scheme will be offered to a wide range of food professionals, from those working as food production operators to those in charge of company departments or even the

whole company. Employers may also be interested in the certification scheme, to improve employees performance, promote lifelong learning activities in their staff and to increase company credibility and reputation.

It also provides food professionals with a clear and structured career pathway, enabling them to understand the skills and competencies required for career advancement. This motivates professionals to continuously update their skills and knowledge in the industry. The certification scheme emphasizes the importance of continuous professional development to maintain and improve competencies, encouraging food professionals to engage in lifelong learning and stay current with industry trends, innovations, and best practices. By recognizing and validating the skills and competencies acquired throughout a professional's career, the certification scheme supports individuals in their pursuit of lifelong learning, as it acknowledges their ongoing efforts in personal and professional growth.

3.2. Overview of the procedure

EQVEGAN proposes a simple procedure for certifying individuals' knowledge, skills, and competences in various food-related job profiles. The certification program focuses on three ESCO job profiles that encompass fundamental roles in the food industry sector, spanning different EQV levels: Food Production Operator (EQF 4), Food Technician (EQF 5), and Food Technologist (EQF 6-7).

Before initiating the application process, potential applicants must assess whether they meet certain general and specific requirements. The benchmarks are based on formal education and/or professional experience to facilitate the procedure, while job profile-specific requirements pertain to the knowledge, skills, and competences necessary for the desired certification.

Applicants are then required to provide evidence of their acquired knowledge, skills, and competences through formal, non-formal, or informal learning. They can accomplish this by uploading relevant documentation to their digital professional portfolio. After that they are ready to complete the application form.

The application is then assessed by a National Technical Committee, which evaluates the applicant's merits. Based on this assessment, the committee offers a certification recommendation to the ISEKI-Food Certification Committee. The final decision regarding certification approval or declination rests with this Committee²⁵. The decision is sent to the applicant along with a comprehensive report that includes training recommendations, either for the years in which the certification is in force or for obtaining the certification in case the

²⁵ *Both National technical Committees and ISEKI-Food certification Committee compose the Certification Body of the EQVEGAN certification scheme.*

applicant had no success²⁶. These recommendations are specific for each individual and are based on weak aspects of the professional portfolio of the applicant.

Following a five-year period, certified individuals must provide evidence of updated knowledge and skills in the relevant certification area(s) through education, training, and/or professional experience. They are required to apply for recertification, extending the validity of their certification title for more than five years.

3.3. Certified occupations

The selected ESCO profiles compose the basic occupations in the food industry sector and are the following:

- [Food production operator](#) (ESCO Code 8160.34, [ISCO-08 skill level 2](#), [EQF level 2-4](#)). Food production operators supply and perform one or more tasks in different stages of the food production process. They perform manufacturing operations and processes to foods and beverages, perform packaging, operate machines manually or automatically, follow predetermined procedures, and take food safety regulations on board.
- [Food Technician](#) (ESCO Code 3119.5, [ISCO-08 skill level 3](#), [EQF level 5](#)). Food technicians assist food technologists in the development of processes for manufacturing foodstuffs and related products based on chemical, physical, and biological principles. They perform research and experiments on ingredients, additives and packaging. Food technicians also check product quality to ensure compliance with legislation and regulations.
- [Food Technologist](#) (ESCO Code 2145.1.4, [ISCO-08 skill level 4](#), [EQF level 6-7](#)). Food technologists develop processes for manufacturing foodstuffs and related products based on chemical, physical, and biological principles, and technology. They design and plan layouts or equipment, oversee staff, engage in controlling, and improve food technologies in food production processes.

3.4. Requirements

Applicants should do a preliminary self-assessment before submitting an application that is based on general and specific requirements.

3.4.1. Education benchmarks

- Food Production Operator: secondary education diploma on Food Technology/Industries (or related). This requirement can be lower if the applicant has professional experience related to the job profile.

²⁶ *The certification scheme aims, not only at recognizing the knowledge and skills of the applicant, but also at promoting lifelong learning. Then, a commitment by the applicant on carrying out training activities during the certification period is expected. The activities may have the purpose of updating previously acquired knowledge/skills or of acquiring new ones.*

- Food Technician: secondary education diploma on Food Technology/Industries (or related). This requirement can be lower if the applicant has professional experience related to the job profile.
- Food Technologist: bachelor in Food Science & Technology (or related). This requirement can be lower if the applicant has professional experience related to the job profile.

3.4.2. Specific requirements

The applicants must have acquired all the essential skills, competences, and knowledge of the job profile (see Annexes VI-VIII).

3.5. Application

In this phase, the applicants:

1. Identify the certification they would like to apply for.
2. Proceed to self-assess their skills, competences and knowledge acquired through formal/non-formal learning and professional experience, versus the general and specific requirements of the selected job profile. If the self-assessment procedure leads to the fulfillment of the requirements, the persons are invited to submit a formal application. Otherwise, the people are informed that they do not meet the requirements of the job profile.
3. The applicants are requested to upload digital documents as proof of the merits they have indicated during the self-assessment step. A virtual space, called continuing professional development portfolio (CPD) of the applicant, will be provided to upload documentation. The use of the [EUROPASS profile](#), [EUROPASS library](#) and [EUROPASS digital credentials](#) will be considered in the implementation of this virtual space.
4. Payment of fees²⁷ and submission of the application. Fees aim to cover expenses of the certification procedure.

3.6. Evaluation

In the evaluation phase, the application is assessed by the following certification bodies:

- The ISEKI-Food Certification Committee (CC) consists of three members of the [EQAS Accreditation Commission](#).
- The National Technical Committee (NTC) consists of 1-3 people ([ISEKI-Food national representatives](#)) and/or individuals with recognized experience in the field).

The CC first receives an application and forwards it to the relevant NTC. The NTC assesses the application against merits uploaded in the CPD portfolio of the applicant and makes a

²⁷ Fees can be paid by an individual or by a company. In the first case is the initiative of the individual to apply for professional certification. In the second case is the company initiative, which wants to certify its staff. Both options will be considered in the application form.

certification recommendation to the CC. After receiving the recommendation from the NTC, the CC reviews the application, makes a final decision and issues (or declines) the certification. The certificate will also recognize optional knowledge/skills/competences (see Annexes V-VII) if the applicant submits proofs of acquirement. This decision is accompanied by a report with training recommendations either for the years in which the certification is in force or for obtaining the certification in case the applicant had no success. These recommendations are specific for each individual, will be done by the evaluator, and can be just working experience or more specific, based on weak aspects of the CV of the certified person.

In the recertification phase, after the period of 5 years the applicant should show evidence of newly acquired knowledge and skills through education, training and/or professional experience in the area(s) of certification and apply for recertification to extend the validity of the certification title for further 5 years. These evidences will proof for updated skills and competences and for the certifee commitment with lifelong learning.

Annex I. Food industry professional qualifications in Spain

Level	Reference nº	Qualification title
1 (EQF 2-3)	INA172_1	Auxiliary operations in food industry elaborations
1 (EQF 2-3)	INA173_1	Auxiliary operations of maintenance and internal transport in food industry
2 (EQF 4)	INA012_2	Cheese manufacturing
2 (EQF 4)	INA013_2	Olive oil production
2 (EQF 4)	INA014_2	Slaughtering, skinning, and cutting of animals
2 (EQF 4)	INA015_2	Bakery and pastries
2 (EQF 4)	INA103_2	Industrial production of canned vegetables
2 (EQF 4)	INA105_2	Sugar manufacturing
2 (EQF 4)	INA106_2	Milk and dairy products manufacturing
2 (EQF 4)	INA107_2	Bakery and confectionery
2 (EQF 4)	INA108_2	Beer manufacturing
2 (EQF 4)	INA174_2	Wine and spirits manufacturing
2 (EQF 4)	INA175_2	Seed and fat oil extraction
2 (EQF 4)	INA235_2	Feed manufacturing
2 (EQF 4)	INA236_2	Soft drinks and bottled water manufacturing
2 (EQF 4)	INA237_2	Roasted and extruded snacks manufacturing
2 (EQF 4)	INA238_2	Coffee and coffee substitutes production
2 (EQF 4)	INA773_2	Industrial meat products manufacturing
2 (EQF 4)	INA774_2	Meat products manufacturing and selling
2 (EQF 4)	INA775_2	Fish and aquaculture products manufacturing and selling
2 (EQF 4)	INA776_2	Industrial fish preserves manufacturing
2 (EQF 4)	INA777_2	Fruit and vegetable retail sale
3 (EQF 5)	INA016_3	Wine technology
3 (EQF 5)	INA176_3	Vegetable canning and juice industries
3 (EQF 5)	INA177_3	Cereal products and candy industries
3 (EQF 5)	INA178_3	Fisheries and aquaculture product industries
3 (EQF 5)	INA179_3	Oil and edible fats industries

3 (EQF 5)	INA180_3	Dairy industries
3 (EQF 5)	INA239_3	Meat industries
3 (EQF 5)	INA240_3	Grape and wine derivatives industry

Source: INCUAL, [National Catalog of Professional qualifications](#)

Annex II. Food industry professional qualifications in Portugal

QEQ Level	Reference nº	Qualification title
2	541096	Operator for processing and preparation of meat products
4	541097	Food quality control technician
2	541098	Fish processing operator
2	541099	Baker-confectioner
4	541354	Food industry technician
5	541388	Food quality and analysis technician/specialist

Source: CQ; [National Catalog of Qualifications](#)

Annex III. Food industry professional qualifications in Türkiye

EQF Level	Reference n°	Qualification title
4	17UY0338-4	Spice and Powder Mixture Preparation Operator
4	18UY0352-4	Vegetable Oil Production Operator
4	20UY0406-4	Raw Milk Storage Manager
4	20UY0405-3	Raw Milk Collector
4	17UY0303-4	Chocolate and Chocolate Products Production Operator
4	22UY0538-4	Filling and Packaging Operator
4	21UY0455-4	Meat Processing Operator
4	17UY0295-4	Fermented Product Production Operator
4	17UY0302-4	Baked Goods Production Operator
4	17UY0339-4	Cereal Production Operator
4	17UY0304-4	Chocolate and Cocoa Cream Dough Production Operator
4	22UY0539-4	Fruit and Vegetable Drying Operator
4	21UY0456-4	Mashed and Concentrated Fruit & Vegetable Production Operator
4	21UY0457-4	Fruit & Vegetable Juice and Soft Drink Production Operator
4	21UY0458-4	Corn Processing Operator
4	21UY0459-4	Starch-Based Sugar Refinery Operator
4	17UY0340-4	Canned Vegetable and Fruit Production Operator
4	17UY0341-4	Sauce Production Operator
4	21UY0460-4	Aquaculture Processing Operator
4	21UY0461-4	Milk and Dairy Processing Operator
4	17UY0293-4	Connoisseur
4	17UY0294-4	Olive Oil Production Operator

Source: [Vocational Qualification Authority of Turkey](#)

Annex IV. Food-related regulated professions available in the Regulated Professions Database

Generic Profession Name	Name of Regulated Profession	Country	Qualification Level
Food Inspector	Contrôleur des denrées alimentaires	Switzerland	PSM - Diploma from post-secondary level (more than 4 years), Art. 11 e
Food Inspector	Inspecteur des denrées alimentaires	Switzerland	
Food Inspector	Osoba provádějící kontrolu výrobce biopotravin a osoby, která uvádí bioprodukty nebo biopotravinu do oběhu	Czech Republic	SEC - Certificate attesting the completion of a secondary course
Food Inspector	Osoba provádějící kontrolu žadatele, ekologického podnikatele, výrobce nebo dodavatele ekologických krmiv nebo rozmnožovacího materiálu	Czech Republic	SEC - Certificate attesting the completion of a secondary course, Art. 11 b
Food Inspector	Rzeczoznawca w zakresie jakości handlowej artykułów rolno-spożywczych	Poland	ATT - Attestation of competence, Art. 11 a
Food Inspector	Trikinsøger	Denmark	ATT - Attestation of competence, Art. 11 a
Food Inspector	secteur vétérinaire public (vétérinaire cantonal)	Switzerland	
Food Technologist	Chimiste cantonal	Switzerland	PSM - Diploma from post-secondary level (more than 4 years), Art. 11 e
Food Technologist	Lebensmittelchemiker	Germany	PS3 - Diploma of post-secondary level (3-4 years), Art. 11 d
Food Technologist	Matvælafræðingur	Iceland	PS3 - Diploma of post-secondary level (3-4 years), Art. 11 d
Food Technologist	Tecnologo alimentare	Italy	PS4 - Diploma of post-secondary level (exactly 4 years), Art. 11 e
Food Technologist	Vágóállatok vágás utáni minősítője (sertés, marha, juh)	Hungary	ATT - Attestation of competence, Art. 11 a

Food Technologist	Élelmiszervállalkozás működtetése	Hungary	SEC - Certificate attesting the completion of a secondary course, Art. 11 b
Producer and distributor of animal foodstuffs	Dovoz a uvádění do oběhu premixů	Czech Republic	SEC - Certificate attesting the completion of a secondary course, Art. 11 b
Producer and distributor of animal foodstuffs	Uvádění premixů do oběhu	Czech Republic	SEC - Certificate attesting the completion of a secondary course, Art. 11 b
Producer and distributor of animal foodstuffs	Výroba krmiv s použitím doplňkových látek nebo premixů	Czech Republic	SEC - Certificate attesting the completion of a secondary course, Art. 11 b
Producer and distributor of animal foodstuffs	Výroba, dovoz a uvádění do oběhu doplňkových látek	Czech Republic	DSE - Diploma (post-secondary education), including Annex II (ex 92/51, Annex C, D), Art. 11 c
Producer and distributor of animal foodstuffs	Výrobu premixů nebo kompletních a doplňkových krmiv s použitím doplňkových látek nebo s použitím premixů	Czech Republic	DSE - Diploma (post-secondary education), including Annex II (ex 92/51, Annex C, D), Art. 11 c

Source: [European Commission Regulated Professions database](#)

Annex V. EQVEGAN proposal for updating ESCO food-related occupation’s profiles

Subject	Type	Occupational profile		
		Food operator	Food technician	Food technologist
Soft skills	Knowledge	English	Food ethics	Food authenticity
		Food ethics		Food ethics
		Project management		Food fraud
				Project management
	Skills	Listen actively	Listen actively	Build team spirit
		Solve problems	Solve problems	Exercise self-control
		Work in teams	Work in teams	Instruct others
				Lead others
				Listen actively
				Manage ethics issues in the food supply chain
				Organize labor
				Solve problems
				Think critically
				Work in teams
		Green skills	Knowledge	Energy efficiency
Circular economy	Waste management			Waste management
	Circular economy			Circular economy
				Food policy
	Skills	Perform strategic planning in the food industry	Assess the life cycle of resources	Assess the life cycle of resources
			Perform strategic planning in the food industry	Perform strategic planning in the food industry

Digitalization and automation	Knowledge	Automation technology	Automation technology	Automation technology
		Control systems	Control systems	Control systems
		Industrial software	Industrial software	Industrial software
		Internet of Things	Internet of Things	Internet of Things
		Programmable logic controller	Product data management	Product data management
		Robotic components	Programmable logic controller	Programmable logic controller
		Robotics	Robotic components	Robotic components
		Sensors	Robotics	Robotics
			Sensors	Sensors
	Skills	Operating food processing machinery	Perform failure analysis of production process	Integrate system components
		Use ICT hardware	Use ICT hardware	Perform failure analysis of production process
		Using digital tools to control machinery	Use ICT systems	Use ICT hardware
		Work safely with machines	Use software for data preservation	Use ICT systems
			Work safely with machines	Use software for data preservation
				Work safely with machines

Annex VI. ESCO food production operator

EQF level 4, ESCO Code 8160.34

Hierarchy in the ESCO [occupations section](#)

- 8 - Plant and machine operators and assemblers
 - o 81 - Stationary plant and machine operators
 - § 816 - Food and related products machine operators
 - § 8160 - Food and related products machine operators
 - [Food production operator](#)

Alternative labels

Food manufacturing worker, Food production operative, Food production worker, Food worker

Essential skills and competences	
<ul style="list-style-type: none"> • administer ingredients in food production • apply GMP • apply HACCP • apply requirements concerning manufacturing of food and beverages • be at ease in unsafe environments • carry out checks of production plant equipment • clean food and beverage machinery • disassemble equipment 	<ul style="list-style-type: none"> • ensure refrigeration of food in the supply chain • ensure sanitation • follow production schedule • keep inventory of goods in production • lift heavy weights • monitor ingredient storage • monitor the production line • support management of raw materials
Essential knowledge	
<ul style="list-style-type: none"> • food safety principles 	<ul style="list-style-type: none"> • food waste monitoring systems

Optional skills and competences	
<ul style="list-style-type: none"> • adjust drying process to goods • administer materials to tea bag machines • apply different dehydration processes of fruits and vegetables • apply extruding techniques • apply preservation treatments • check bottles for packaging • check quality of products on the production line • check the quality of raw materials at reception 	<ul style="list-style-type: none"> • handle kitchen equipment according to the requirements • label samples • measure sugar refinement • mitigate waste of resources • monitor almond blanching process • monitor coating specifications • monitor filling machines • monitor milled food products • monitor oil blending process • monitor sugar uniformity

<ul style="list-style-type: none"> • <u>conduct cleaning in place</u> • <u>dispose food waste</u> • <u>dispose non-food waste within the food industry</u> • <u>ensure compliance with environmental legislation in food production</u> • <u>ensure correct goods labelling</u> • <u>examine production samples</u> • <u>execute chilling processes to food products</u> • <u>follow evaluation procedures of materials at reception</u> • <u>follow hygienic procedures during food processing</u> 	<ul style="list-style-type: none"> • <u>mould chocolate</u> • <u>operate automated process control</u> • <u>operate forklift</u> • <u>perform carbonation processes</u> • <u>perform cleaning duties</u> • <u>rectify spirits</u> • <u>set up equipment for food production</u> • <u>tend bottle-washing machine</u> • <u>tend packaging machines</u> • <u>use resource-efficient technologies in hospitality</u> • <u>weigh materials</u> • <u>work according to recipe</u>
<p>Optional knowledge</p>	
<ul style="list-style-type: none"> • <u>centrifugal force</u> • <u>cleaning of reusable packaging</u> • <u>condiment manufacturing processes</u> • <u>fermentation processes of food</u> • <u>food canning production line</u> • <u>food homogenisation</u> 	<ul style="list-style-type: none"> • <u>food storage</u> • <u>health, safety and hygiene legislation</u> • <u>hydrogenation processes for edible oils</u> • <u>milk production process</u> • <u>modern brewing systems</u>

Annex VII. ESCO food technician

EQF level 5, ESCO Code 3119.5

Hierarchy in the ESCO [occupations section](#)

- 3 - Technicians and associate professionals
 - 31 - Science and engineering associate professionals
 - 311 - Physical and engineering science technicians
 - 3119 - Physical and engineering science technicians not elsewhere classified
 - [food technician](#)

Alternative labels:

Food tech expert, Food technology expert, Food tech specialist, Food technology specialist

Essential skills and competences	
<ul style="list-style-type: none"> ● <u>apply GMP</u> ● <u>apply HACCP</u> ● <u>apply requirements concerning manufacturing of food and beverages</u> ● <u>carry out checks of production plant equipment</u> ● <u>clean food and beverage machinery</u> ● <u>ensure public safety and security</u> ● <u>handle delivery of raw materials</u> ● <u>identify the factors causing changes in food during storage</u> 	<ul style="list-style-type: none"> ● <u>manage all process engineering activities</u> ● <u>manage delivery of raw materials</u> ● <u>manage packaging material</u> ● <u>monitor freezing processes</u> ● <u>monitor ingredient storage</u> ● <u>monitor the production line</u> ● <u>prepare visual data</u> ● <u>schedule regular machine maintenance</u> ● <u>set up equipment for food production</u> ● <u>write work-related reports</u>
Essential knowledge	
<ul style="list-style-type: none"> ● <u>food and beverage industry</u> ● <u>food preservation</u> ● <u>food product ingredients</u> ● <u>food waste monitoring systems</u> ● <u>functional properties of foods</u> 	<ul style="list-style-type: none"> ● <u>molecular gastronomy</u> ● <u>pathogenic microorganisms in food</u> ● <u>processes of foods and beverages manufacturing</u> ● <u>quality assurance methodologies</u>

Optional skills and competences	
<ul style="list-style-type: none"> ● <u>adjust production schedule</u> ● <u>administer ingredients in food production</u> ● <u>analyse packaging requirements</u> ● <u>analyse production processes for improvement</u> ● <u>analyse work-related written reports</u> 	<ul style="list-style-type: none"> ● <u>evaluate ingredient documentation from suppliers</u> ● <u>follow hygienic procedures during food processing</u> ● <u>follow-up lab results</u> ● <u>investigate customer complaints</u>

<ul style="list-style-type: none"> ● <u>apply control process statistical methods</u> ● <u>apply food technology principles</u> ● <u>assist in the development of standard operating procedures in the food chain</u> ● <u>be at ease in unsafe environments</u> ● <u>calibrate laboratory equipment</u> ● <u>check quality of products on the production line</u> ● <u>check the quality of raw materials at reception</u> ● <u>develop new food products</u> ● <u>ensure compliance with environmental legislation in food production</u> ● <u>ensure finished products meet requirements</u> ● <u>ensure full functioning of food plant machinery</u> ● <u>ensure quality of final product</u> 	<ul style="list-style-type: none"> ● <u>keep inventory of goods in production</u> ● <u>manage corrective actions</u> ● <u>manage resources in food manufacturing</u> ● <u>mitigate waste of resources</u> ● <u>monitor coating specifications</u> ● <u>monitor developments used for food industry</u> ● <u>monitor processing conditions</u> ● <u>operate automated process control</u> ● <u>participate in the development of new food products</u> ● <u>perform food risk analysis</u> ● <u>perform quality audits</u> ● <u>plan shifts of employees</u> ● <u>read engineering drawings</u> ● <u>select adequate packaging for food products</u> ● <u>use resource-efficient technologies in hospitality</u>
<p>Optional knowledge</p>	
<ul style="list-style-type: none"> ● <u>cleaning of reusable packaging</u> ● <u>combination of flavours</u> ● <u>combination of textures</u> ● <u>fermentation processes of beverages</u> ● <u>fermentation processes of food</u> ● <u>food canning production line</u> 	<ul style="list-style-type: none"> ● <u>food legislation</u> ● <u>food materials</u> ● <u>food safety principles</u> ● <u>laboratory-based sciences</u> ● <u>legislation about animal origin products</u>

Annex VIII. ESCO food technologist

EQF levels 6,7 ESCO Code 2145.1.4

Hierarchy in the ESCO [occupations section](#)

- 2 - Professionals
 - 21 - Science and engineering professionals
 - 214 - Engineering professionals (excluding electrotechnology)
 - 2145 - Chemical engineers
 - 2145.1 - chemical engineer
 - [food technologist](#)

Alternative labels:

Food tech expert, Food technology expert, Food technology specialist, Food tech specialist

Essential skills and competences	
<ul style="list-style-type: none"> ● analyse packaging requirements ● analyse samples of food and beverages ● apply GMP ● apply HACCP ● apply food technology principles ● apply requirements concerning manufacturing of food and beverages ● assess HACCP implementation in plants ● collect samples for analysis ● describe chemical innovation in products ● develop food production processes ● ensure public safety and security ● evaluate ingredient documentation from suppliers ● follow-up lab results ● identify the factors causing changes in food during storage ● improve chemical processes ● interpret data in food manufacturing ● keep up with innovations in food manufacturing 	<ul style="list-style-type: none"> ● lead process optimisation ● manage discarded products ● manage food manufacturing laboratory ● manage the use of additives in food manufacturing ● monitor developments used for food industry ● monitor processing conditions ● perform food risk analysis ● prepare visual data ● read engineering drawings ● strive for nutritional improvement of food manufacturing ● translate chemical innovations in pragmatic terms ● use new technologies in food manufacturing ● watch food product trends ● write work-related reports
Essential knowledge	
<ul style="list-style-type: none"> ● bioeconomy ● biotechnology ● chemistry ● combination of flavours ● combination of textures ● enzymatic processing ● fermentation processes of food ● food allergies 	<ul style="list-style-type: none"> ● food science ● food storage ● food toxicity ● foodborne diseases ● functional properties of foods ● health, safety and hygiene legislation ● ingredient threats ● laboratory-based sciences

<ul style="list-style-type: none">● <u>food and beverage industry</u>● <u>food canning production line</u>● <u>food engineering</u>● <u>food legislation</u>● <u>food materials</u>● <u>food preservation</u>● <u>food product ingredients</u>● <u>food products composition</u>● <u>food safety principles</u>	<ul style="list-style-type: none">● <u>legislation about animal origin products</u>● <u>molecular gastronomy</u>● <u>pathogenic microorganisms in food</u>● <u>processes of foods and beverages manufacturing</u>● <u>quality assurance methodologies</u>● <u>risks associated to physical, chemical, biological hazards in food and beverages</u>● <u>traceability in food industry</u>
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Optional skills and competences	
<ul style="list-style-type: none"> ● <u>adapt production levels</u> ● <u>adjust production schedule</u> ● <u>advocate for consumer matters in production plants</u> ● <u>analyse production processes for improvement</u> ● <u>analyse trends in the food and beverage industries</u> ● <u>apply control process statistical methods</u> ● <u>apply scientific methods</u> ● <u>assess ergonomics of the workplace</u> ● <u>assess food samples</u> ● <u>assess nutritional characteristics of food</u> ● <u>assess quality characteristics of food products</u> ● <u>assess shelf life of food products</u> ● <u>be at ease in unsafe environments</u> ● <u>carry out environmental audits</u> ● <u>carry out training in environmental matters</u> ● <u>check quality of products on the production line</u> ● <u>check the quality of raw materials at reception</u> ● <u>collect briefing regarding products</u> ● <u>configure plants for food industry</u> ● <u>coordinate launches of new food products</u> ● <u>create new recipes</u> ● <u>detect microorganisms</u> ● <u>develop food scanner devices</u> ● <u>develop new food products</u> ● <u>develop standard operating procedures in the food chain</u> ● <u>ensure compliance with environmental legislation in food production</u> ● <u>ensure continuous preparedness for audits</u> ● <u>ensure correct goods labelling</u> ● <u>ensure finished product meet requirements</u> ● <u>follow laboratory manuals</u> ● <u>food plant design</u> 	<ul style="list-style-type: none"> ● <u>identify hazards in the workplace</u> ● <u>impart training on general quality management supervision</u> ● <u>inspect silo systems</u> ● <u>keep food laboratory inventory</u> ● <u>keep up-to-date with regulations</u> ● <u>manage communications with food industry governmental bodies</u> ● <u>manage environmental management system</u> ● <u>manage packaging development cycle from concept to launch</u> ● <u>manage scale-up experiments for manufacturing of products</u> ● <u>mitigate waste of resources</u> ● <u>monitor ingredient storage</u> ● <u>monitor packaging operations</u> ● <u>monitor the production line</u> ● <u>operate automated process control</u> ● <u>participate as observer in different types of audits in the food sector</u> ● <u>participate in the development of new food products</u> ● <u>perform chemical experiments</u> ● <u>perform food safety checks</u> ● <u>perform microbiological analysis in the food chain</u> ● <u>perform physico-chemical analysis to food materials</u> ● <u>perform quality audits</u> ● <u>perform sensory evaluation</u> ● <u>plan shifts of employees</u> ● <u>provide food labelling expertise</u> ● <u>provide training on quality management supervision</u> ● <u>research new cooking methods</u> ● <u>research new food ingredients</u> ● <u>select adequate packaging for food products</u> ● <u>use resource-efficient technologies in hospitality</u>
Optional knowledge	
<ul style="list-style-type: none"> ● <u>cultural customs on food preparation</u> ● <u>effects of pesticides in food raw materials</u> ● <u>fermentation processes of beverages</u> 	<ul style="list-style-type: none"> ● <u>food homogenization</u> ● <u>food safety standards</u>

Annex IX. Glossary

Competences	Combination of knowledge, skills, behaviours, and attributes that enable an individual to perform effectively in a specific role or context. They involve the ability to apply knowledge and skills in real-world situations, adapt to new challenges, and demonstrate desired behaviours and attributes. Competences are often associated with job performance and can include things like leadership, teamwork, adaptability, and decision-making.
Continuous learning	Ongoing process of acquiring new knowledge, skills, and competencies throughout one's career. It involves actively seeking out opportunities to expand one's understanding and abilities, adapting to changes in technology and the environment, and staying up to date with current trends and developments in a particular field or industry. It can take various forms, including formal education, self-directed study, on-the-job learning, attending workshops or seminars, and networking with peers and experts.
Formal education	Structured education system that runs from primary (and in some countries from nursery) school to university, and includes specialized programs for vocational, technical and professional training. Formal education often comprises an assessment of the learners' acquired learning or competences and is based on a programme or curriculum which can be more or less closed to adaptation to individual needs and preferences.
Informal education	Lifelong learning process, whereby each individual acquires competences, skills and knowledge from the educational influences and resources in his or her own environment and from daily experience. People learn from family and neighbours, in the marketplace, at the library, at art exhibitions, at work and through playing, reading and sports activities. Learning in this way is often unplanned and unstructured.
Knowledge	Information, facts, concepts, and theories that a person has acquired through learning, study, or experience. It encompasses both theoretical and practical understanding of a subject or domain. It forms the foundation upon which skills and competencies are built.
Learning outcomes	Specific statements that describe the knowledge, skills, and competences that learners are expected to acquire or demonstrate after completing a particular educational program, course, training session, or learning experience. These outcomes are typically formulated before the educational activity begins and serve as a guide for both educators and learners. They help clarify the purpose and expectations of the learning experience and provide a way to assess whether the desired learning has occurred.
Lifelong learning	Approach to learning—whether in personal or professional contexts—that is continuous and self-motivated. Lifelong Learning can be formal or informal and takes place throughout an individual's life. It is important for an individual's competitiveness and employability, but also enhances social inclusion, active citizenship, and personal development. It has a broader scope, purpose, and timeframe than continuous learning.

Non formal education	Planned, structured programmes and processes of personal and social education designed to improve a range of skills and competences, outside the formal educational curriculum. Non-formal education is what happens in places such as youth organisations, sports clubs and drama and community groups where people meet, for example, to undertake projects together, play games, discuss, go camping, or make music and drama.
Occupation	Person's regular work or employment, the job or profession they engage in to earn a living.
Professional certification	Process that proves that a person has the knowledge, expertise, skills, and competences to perform a specific task or role in a profession.
Professional qualifications	Set of competence standards relevant for employment that may be acquired through modular training or other types of training, including professional experience. These qualifications allow to respond to relevant occupations and jobs, with value and recognition in the labour market, but in no case regulate the profession or professional activity. They do not constitute a training plan, nor are they taught in any centre, but are the basis for drawing up the training offer leading to the award of vocational training diplomas and certificates of professionalism.
Qualification	Formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.
Regulated profession	A profession is regulated if the national legislation of the host country stipulates that specific requirements need to be met in order to be allowed to practise this profession. In regulated professions, you need a license or certificate from a regulatory body in order to work and use the specific job title associated with that career. Every country has its own list of regulated professions. Regulation typically involves setting criteria for entry into the profession, establishing ongoing requirements for professional development and continuing education, and enforcing standards of practice and ethics.
Skills	Practical abilities and proficiencies that a person develops through practice, training, and experience. They involve the application of knowledge to perform specific tasks or activities effectively and efficiently. Skills can be technical (e.g., coding, welding) or soft (e.g., communication, problem-solving). They often require hands-on experience and can be honed and improved over time
Vocational education and training (VET)	Education and training programs that are designed to prepare individuals for specific careers or occupations. These programs are typically focused on providing practical skills, knowledge, and competencies that are directly relevant to a particular trade, profession, or industry.
Work-based learning	Educational approach where students or employees gain knowledge, skills, and hands-on experience while working in actual job environments or on real projects. There are various forms of work-based learning including internships, apprenticeships, co-operative education, service learning, on-the-job training and project-based learning.