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Analysis of current related regulated professions in the field of food science and technology in Europe

Workpackage 2: Definition of Careers in FST
Task 2.1: Analysis of current related regulated professions
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Foreword

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1. Identification of regulated Food Science and Technology (FST) professions in EU

The analysis was carried out taking into account the Directive 2005/36/EC on the recognition of professional qualifications, article 11 commas d), e) – higher education qualifications - as they reflect the educational and training framework of the Track_Fast project.

1.1. Regulated FST professions in EU

According to European commission regulated professions database http://ec.europa.eu/internal_market/qualifications/regprof (last access in October 2010), there are four professions with the word “food” in translation, regulated in some EU countries, as follows:

- **Food Technologist** (three countries: Slovenia*, Iceland*, Greece*, (Italy (*))
- **Food Inspector** (two countries: Switzerland*, Poland)
- **Food Hygienist** (two countries: Slovakia*, Denmark)
- **Food Chemist** (one country: Switzerland*)

However, according to the education requirements only some of them (which are marked by *) are in agreement with the Article 11, commas d) and e) of the Directive 36/2005 – diploma certifying completion of training at post-secondary level of at least 3 years (11d) and 4 years (11e) of duration. In reality, this corresponds, respectively, to the diploma at BSc and MSc level.

The Italian partners involved in the WP2 of the Track_Fast project evidenced the presence of a regulated profession “Food Technologist” in Italy, which is not yet registered in the EC database. Also the Turkish partner in the Track_Fast consortium informed the existence in Turkey of the regulation of the Food Engineer profession. Turkey is not in the EU but applied to accede and is a frequent participant in EU projects, particularly in Track_Fast, and is thus included in this research.

In addition to those mentioned above, some other professions partly related to the field of Food Science and Technology, which are regulated in some countries, according to the Directive 2005/36/EC, were found:
- **Oenologist** (in one country according to EC regulated professions database—Spain).
  This profession is registered also in Portugal and Italy (see Milestone 2.1), but it is not listed in EC database.
- **Industrial hygienist** (one country—The Netherlands)
- **Sanitary Engineer** (two countries: Slovenia and Bulgaria)

According to this analysis, there are at least seven different professions in the field of FST, which are regulated in some EU countries.¹

The analysis of the database (Sept 2010) highlights the heterogeneity on the regulation in the FST profession that could cover only specific fields of professional sectors and its role in the society. In some countries (e.g. Slovenia and Slovakia) only the »Food Technologist in the health sector« is regulated as the profession according to the Directive 36/2005, whilst it is not regulated when this profession is carried out in all the other professional sectors. In Slovenia, there is also »nutritionist and/or food organizer in school sector« which is also a regulated profession according to the Article 11d and e “in school sector”, but not in other sectors. These examples indicate that the food professions in some countries are not regulated only on the basis of the specific skills and professional competences but also on the sector where the professional works (e.g. health, education, industry). Also, the regulation of these professions is not driven by professional associations but from specific ministries (e.g. health and education).

The **Directive 2005/36/EC** was planned to favour the exchange of professionals among the EC countries based on the definition of minimum training requirements and tuning of the

¹ Notes to the EC database:
- The functionalities of the »search« option in the database may lead to different results in terms of regulated professions and only in some cases the contact persons from competent EU authorities are included in the web-pages.
- The database is not updated and/or complete with the information from all EU countries. The consequence is that besides this list of regulated professions, other could be active in the different EU countries.
regulation. To understand the applicability of this law in the FST professional, an indication could be obtained from the number of professionals who obtain professional qualifications in one country (country of origin) and apply for recognition in another country to practice there on a permanent basis. From the scarce data available from the EU (not complete for all countries) only five such cases were registered (one for oenologist, four for Food Technologist), but it could be presumed that many cases of such cross-boardings have been not registered.

Moreover, the food technology (in Italy) and the food engineer (in Turkey) professionals are relatively new in the field of professions and, once again, it highlights the need of a clarification of its possibilities and implementation of its regulation in Europe.

A distinction must be made between these regulated professions: whether is the access to the profession being regulated or is just the use of the profession title being regulated. For the professions under the ministries control, the access to the profession is regulated. For the professions not under the ministries control, only the use of the profession title (e.g., Oenologist) was regulated, with the exception of the Italian Food Technologist and the Turkish Food Engineer where some industrial activities are required to be done by those professionals. These were the only two FST professions found to fit the aim of this study since these were the only cases where a complete regulation was found, similar to the regulation of the seven wide recognized professions by the Directive 2005/36/EC.

When studying these two professions it’s worth to point out that the regulation is related to the educational offer in the respective country: in Italy, many programmes in Food Science/Technology are offered in higher education institutions but no Food Engineering programmes can be found and in Turkey the reverse offer is found. However, both professions appear to be regulated by the same reason: assuring public health protection through the promotion of a better food safety.

1.2. Comparative analysis of FST related regulated professions

For comparative and thus more reliable analysis of the data about regulated FST professions in EU, professions were identified and data analysed on two different, but closely related fields:
- For professions closely related to FST, but »non-sectoral«, e.g. Nutritionist (+ food organizer) and Dietician
- For the profession, closely related to FST, but from »sectoral field« (Veterinary surgeon).

These cases could be understood also as examples of consolidated practice of regulation in the field, where further tasks are defined in Track_Fast WP2.

1.2.1. Comparative analysis with the »non-sectoral« professions »Nutritionist« and »Dietician«

The identification and analysis of the currently regulated professions in the field of nutrition were also included because in some small countries (e.g. Slovenia) the study programmes in the field of »Food Science Technology«, »Food Safety« and »Nutrition« are still joined (at BSc and even on MSc level). Until few years ago this was true also for dietetics/clinical nutrition, so people currently employed on these fields mainly studied in the field of FST. So, if one of the goals of all these studies is also the improvement of the study curricula to fit more to career paths and thus also regulated professions, this has to be taken into account. Besides this, regulation in the field of nutrition/clinical nutrition/dietetics seems to be usefull as an example of consolidated practice of regulation.

According to European Commission regulated professions database, the profession Nutritionist, clinical nutritionist or food organizer (Directive 36/2005) is regulated in six countries (Slovakia, Slovenia, Czech Republic, Iceland, Norway, Malta).

The profession Dietician (according to the Directive 36/2005) is regulated in eight countries (United Kingdom, Sweden, Malta, Ireland, Iceland, Lithuania, Denmark, Cyprus) and also in Italy, but not registered in the EC database.

The EU statistical data (not complete for all countries) of the number of professionals who obtain professional qualifications in one country (country of origin) and apply for recognition in another country to practice there on a permanent basis currently (Sept 2010) correspond to 71 for the profession of »Nutritionist« and 489 for the profession of »Dietician«.
1.2.2. Comparative analysis with the »sectoral« profession – »Veterinary surgeon«

This profession, partly related to the field of FST, belongs to the »sectoral professions« and benefits from automatic recognition by the Directive 36/2005 on the basis of harmonisation of minimum training requirements (briefly, these are doctors, nurses, dentists, architects, pharmacists, midwives, and veterinarians).

According to the EC database, it is currently under regulation in 15 EU countries. It can be considered as »an example of good practice«, because of the professional relatedness and also high number of statistically registered cross-border decisions taken on professionals who obtain professional qualifications in one country (country of origin) and apply for recognition in another country to practice there on a permanent basis. From 2005-2006 statistics of cross-border decisions it is evident, that this number was 3644 requests in total for all EU countries.

It is necessary to observe that the veterinary surgeon is a well recognised profession and very ancient is the history of the university courses in this field. In some EU countries the FST courses started as a branch of other well known university courses (e.g. Chemistry, Engineering, Agronomy, Biological Sciences...) and this could have hindered the creation of a specific FST regulated profession.

1.3. Main conclusions about identified regulated FST professions in EU

1. High heterogeneity among the EU countries in the regulation of FST professions:
   Many countries (including some economically most important, like Germany, France etc.) do not have any regulated professions in this field (at least not evidenced in the EC database nor participated by national partners of TRACK_FAST consortium), but some small countries (e.g. Slovenia, Slovakia) have a few. However, the regulation in these countries is not driven by the professional associations but from governmental requirements of the regulation of all professions in some sectors, covered by specific ministries (e.g. health and education).

2. Very low number of EU countries with regulated professions in the field of FST and, in connection with this, very low number of registered cases of cross-border
decisions taken on professionals who obtain professional qualifications in one country (country of origin) and apply for recognition in another country for permanent work.

3. High heterogeneity of the professions registered, but at the same time, two regulated professions falling under separate profession headings can cover similar activities.

4. The regulation of FST professions is related to the educational offer of the respective country although the fundamentals for the regulation may the same.

From the comparative analysis of the identified regulated professions in the field of FST and some other closely related fields (e.g. nutrition, veterinary medicine), there is an obvious need for further analysis of the situation and preparation of the recommendations for regulation of profession in the fields of FST in EU.

2. Critical analysis of regulated professions

2.1. Analysis of data about regulated FST professions in EU according to the specific requirements of Task 2.1

These requirements include the following evaluation questions:

- How current regulated profession fit in career paths in the field of FST?
- How was the implementation carried out through professional associations or governmental departments?
- How professional associations recognise the capability for professional practice (qualification-based or competency-based assessment)?
- Comparative analysis to the seven Europe-wide recognized professions (Directive 2005/36/EC).

2.1.1. How current regulated profession fit in career paths in the field of FST?

The questionnaire has been prepared for this purpose by all partners of WP2 in the last months and recently installed on the server. However, from the data already available, we can assume that currently regulated professions do not fit the current career paths neither with the needs on the FST labour market in EU member states. In Italy the Board of Food Technologists was created to strengthen the importance of the peculiar and
highly specific FST university programme. However, many graduated students in FST may register in Boards different to that of Food Technologist. For instance, in Italy, the graduated FST could do the exam to sign in to the Agronomist and Agrotechnic Boards. In other countries they could register in the Engineering or Chemists' Board. From the other side, food safety (or nutritional) professional could have an education at university different from FST (e.g. veterinary, biology) because the authorities and the ministries do not recognise yet the highly specific training and expertise of the FST graduated/professional.

2.1.2. How was the implementation carried out through professional associations or governmental departments?

Based on the situation in the countries with regulated professions, it could be stated that the situation is different in different countries. In some of them the regulation procedures were mainly driven by the government and/or specific ministry and sectoral authorities (which is not FST, but e.g. health, education). This is the reason for »professionally hardly acceptable discrepancies«, like the fact that »Food Technologist in the health sector« and »food organizer in the school/education sector« are regulated professions, but »Food Technologist in »non-health sector« or »food organizer in the school/education sector« are not regulated professions. This evidences that the authorities are mostly able to recognise only some specific expertises among the overall skills of the Food technology professional. This could be due to:
- scarce knowledge of the overall skills of the FT professional
- too high importance given to some specific skills.

The role of professional associations in regulation of professions in FST seems to be poor (or even not present at all in some countries). However, where it exists (e.g. Italy, Associazione dei Laureati nelle Discipline Alimentari, ALDAL, www.aldal.it/; in Turkey, Food Engineers Chambers http://www.gidamo.org.tr/) are very active and they promoted the food regulated profession. In at least three countries with FST professions (Italy, Iceland, Greece) the professional associations and/or the Ministry of interest (e.g. for industry) are involved in active definition of collective agreement about the (minimum) salary. For instance, in Italy for Food Technology professional consultants,
the Board has edited a document with the guidelines of “minimum rates” for the various services. This is organized similarly in Greece and Iceland, although in these countries the FST profession is not regulated in the same way as it is in Italy.

The activities of professional associations in the field of FST at the national level were not identified either (at least not in the countries which report regulated FST profession in the EC database).

The examples of more active associations in some other related fields are evident: for example, the active role of the National Associations of Dieticians and of the European Federation of the Associations of Dieticians (EFAD) was active in protection of the profession »Dietician«, regulation of the profession in some countries and in preparation of reference standards for dieticians and their educational system (EFAD, 2005).

2.1.3. How professional associations recognise the capability for professional practice (qualification-based or competency-based assessment)?

In Italy, the Association of Food Technologists requires a second cycle degree in Food Science and Technology plus an exam to became a professional recognised by this Association. In Greece and Turkey, respectively the Association of Food Technologists and the Chambers of Food Engineers, requires a first cycle on Food Technology.

The same can be concluded from the practice in the fields of work with more developed systems of professional regulation (e.g. medical and other legal professions like notaries, pharmacists, as well as lawyers, architects and engineers).

2.1.4. Comparative analysis to the seven Europe-wide recognized professions (Directive 2005/36/EC).

Partly this comparative analysis is included in other parts of this report (e.g. 1.2.) and in concluding remarks.

Concerning the activity of professional associations, these are the promoters of the activities in the regulation of professions and probably they are the only ones that could
substantially contribute to recognition of food related professions. Sectoral professions (Directive 2005/36/EC), like veterinarians, architects, pharmacists etc., have developed in the history well recognised principles which help them to keep clear image and clear expectations on what they can do professionally and what can be expected to do. This is associated with more autonomy, status and prestige, and thus, with more attractive and rewarding careers. This image for food professionals is not clear.

2.2. Analysis of data according to the theory of regulation of professions

This analysis includes the following evaluation questions:
- Why (and why not) to regulate?
- How to regulate?
- What to regulate?

2.2.1. Why (and why not) to regulate?

According to Garoupa (2004), there are different theoretical explanations why the regulation of professions is needed, but they can be summarized in three points, as follows:
- Public interest for correcting failures on the market because of »information asymmetry"
- Other public interests (safety)
- Private interest

2.2.1.1. Public interests for regulation

The main market failure that applies to professional markets is information asymmetry (Stephen and Love, 1999). Under such conditions the market usually fails to produce optimal quantity and quality of the professional service. As a consequence, the economic efficiency is also limited. Besides this, some protection for the consumer of these professional services is necessary to guarantee quality. In summary, the quality, confidence, honesty, trust should be achieved and thus optimal protection and safety for the consumers of professional services and professionals as well. For example, adverse selection (because of the
consumers lack of ability to judge the quality of professionals) should be protected by the regulation (Garoupa, 2004).

If we may translate this scientific definitions of public interests for regulation of the professions on the field of food science and technology (including food safety) the regulation of FST professions is needed to guarantee quality and safety of the food production along the whole food chain - from the farmer, food processor, caterer, retailer etc., to the final consumer, e.g. protection and/or contribution of his health (and in this way also to keep public health on high standards and public costs for health services as low as possible). Also, but in a smaller scale when compared to the seven wide recognised professions, nowadays FST services are acquired by specific “consumers” – e.g., some SMEs, restaurants – for which the lack of ability to judge the quality of the FST professional is a reality. A large company, with qualified professionals, may also be interested to hire a FST professional registered in a professional association due to its recognised expertise that guarantees his/her work as well as the respect of an ethical code, besides its possible higher salary.

Until now, the existing regulated professions different from the Food Technology/Engineering ones, like Agronomist, Chemists, etc., are involved only in specific steps of the food chain (raw material production, food analysis, etc.) as the university education and training as well as the career path of the latter ones is in general “sectoral”.

2.2.1.2. Private interest for regulation

From the private perspective the regulation of professions and markets with professional services is needed because of the interests of the members of the profession. For example, the professional licensure should decrease the supply of professionals, increase the prices charged by professionals and thus increase existing professionals’ income. From the consumer and public point of view, this is an unwanted interest for regulation.

2.2.2. How to regulate?

There are again different possible institutional arrangements for regulation of professions (Garoupa, 2004):

- Regulation by the government
- Self-Regulation
- Regulation by third-parties (private regulation)

2.2.2.1 Regulation by the government

Regulation by the government usually includes quality regulation, certification and licensing, but also some other forms are in practice to some restrict the entry to the market, including penalties, which are imposed on low quality professional or their services, prohibiting misleading advertising etc. Under certification or licensing, a document (certificate or license) is awarded to the professional who satisfies certain conditions, i.e. education or training. The government as well as a private agency may certificate or license professionals, and regulate professional education, compulsory periods of training and performance requirements (Garoupa, 2004).

As referred in section 1, FST professions regulated for specific sectors (e.g., Food Technologist in the Health sector in Slovenia) are regulated by the governmental departments/ministries.

2.2.2.2 Self-Regulation

Professional regulators are very well informed about the situation on the market, so they can act efficiently with lower costs, but there are also disadvantages due to possible cartel-like behaviour. This can be limited if there is more than one professional body in competition with each other, if adequate legal instruments are available (e.g., efficient tort law) etc. (Garoupa, 2004).

The difference between licensing (2.2.2.1) and self-regulation is that while rules are issued by public authorities in both settings (since the professional body is entrusted with public authority), entry and performance are regulated by the state in the first case and by the profession in the second case. The consequence is that self-regulation promotes strong professional association whereas licensing does not (Garoupa, 2004).

This is the situation of the Italian Food Technologist, regulated by the Associazione dei Laureati nelle Discipline Alimentari (ALDAL, www.aldal.it).

2.2.2.3 Regulation by third-parties (private regulation)
Different alternatives to professional regulation have been proposed, but most of them never implemented. One possibility corresponds also to independent rating agencies. There is also a trend (mainly in the US) to relate effective regulation of professional services with litigation. If the regulation does not exist, the latter could be a substitute, but it has many limitations (Garoupa, 2004).

No example of this kind of regulation was found in FST or other professions specified in his study.

2.2.3. Regulatory instruments - What to regulate?

There are five major groups of restrictions (Garoupa, 2004):

i. Entry restrictions with consequent professional monopoly rights (required skills acquired by education and training)

ii. Restrictions on advertising and other means of promoting competition with the profession

iii. Restrictions on fees and fee contracts

iv. Restrictions on organizational forms

v. Restrictions on conduct and procedures

Table 1 summarizes the most common restrictions of some regulated professions and in the appendixes 1, 2 and 3 are listed the restrictions for the Italian Food Technologists, the Slovenian Food Technologist in the Health sector and the Turkish Food Engineer.

Entry restrictions are usually academic qualifications in these and the seven wide recognised professions. In the Italian FT an additional capability test is required.

Restrictions on advertising, fees and organizational forms do not apply to the FST professions here mentioned (Appendices 1, 2 and 3) since their market for the commercialization of services is not the general public but private companies or governmental departments.
Restrictions on conduct are part of the regulation particularly in self-regulation, as is the situation of the Italian Food Technologist and of the seven wide recognised professions.

Table 1 Summary of the most common characteristics of some regulated professions across EU

<table>
<thead>
<tr>
<th></th>
<th>Medical doctors, Veterinarians</th>
<th>Architects</th>
<th>Food Technologist (Italy) /Food Engineer (Turkey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why is regulated</td>
<td>Consumer health/safety</td>
<td>Information asymmetry</td>
<td>Consumer safety</td>
</tr>
<tr>
<td>How is regulated</td>
<td></td>
<td>Self-regulation</td>
<td></td>
</tr>
<tr>
<td>What is regulated</td>
<td>Entry restrictions;</td>
<td>Restrictions on conduct and procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrictions on advertising;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrictions on fees;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrictions on organizational forms.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Final remarks and conclusions

From the whole work performed in the frame of task 2.1 till now it is evident that the issue about regulated professions in the field of food science and technology in Europe is important and it needs an improvement. However, it is evident also that this is a complex task. It seems that European countries are not focused on it with the same principles, due to the historical reasons. In addition, the professions dealing with food and the activities of food professional in the food supply chain are very diverse in different European countries. In some of them, the main pool is concentrated in basic production (agriculture, animal breeding) in some others on technological issues, in the third group on some other fields (e.g. veterinary studies or chemistry). This is reflected also in the strength of institutions
leading development on these fields, with the influence also on regulation of professions. This is an additional reason that the situation is complex and this work deserves special attention.

Beside this, the European system of higher education is still under transformation with Bologna process, which is bringing many changes in organization of studies and well as in “their final products”. At the moment it is probably not possible that somebody would have a real overview to the details of all consequences of this reformation of studies. We will need some time to assess the state of the art in this field. This will be possible only when Bologna transformation will be fully adopted by EU countries - this is planned for 2014, according to the vision documents and plans in transformation of European high educational system.

At the same time there is also a debate about the possibility to deregulate the professions, with the idea that this will decrease the costs of regulation, remove the informational barriers and complex formal procedures and thus increase competition that will generate quality and liberate transfer on the international job market. However, it seems that this hypothesis is taken in consideration especially in the countries with very high number of regulated professions and in the time before crisis (personal communication with the contact person at the Ministry for Work, Family and Social Affairs, Rep. of Slovenia).

Concerning the activity of professional associations, these are usually the promoters of the activities in the regulation of professions, but they are as diverse as the situation in different countries, including the origins of studies at European universities. The image of the institutions as well as of individual professionals is strongly connected to the place of original study. This is particularly the case in bigger countries where you can find food professionals coming from different mentioned origins. But analysing this field one should have in mind the final expertise and capacity of FST professional (Food Technologist/Inspector/Manager etc). This should be the only measure for its quality and consequently his/her capacity as problem solver/technology manager/ inspector/developer etc. One of the main goals of work in Tasks 2.1 and 2.2 Track_Fast project should be a contribution to this mission.
4. References


Other sources of information:

European commission regulated professions database
http://ec.europa.eu/internal_market/qualifications/regprof/index.cfm?fuseaction=home (September 2010);
Personal communication to competent authorities and contact point in EU member states;
National governmental documents about regulated professions from different EU countries;
Personal communication to the Association of Food Technologists in Italy;
Personal communication to the Chambers of Food Engineers in Turkey;
### Appendix1 - Details of “Food Technologist” as the regulated profession in Italy

<table>
<thead>
<tr>
<th>Country</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated profession</td>
<td>Food Technologist (<a href="http://www.tecnologialimentari.it/">www.tecnologialimentari.it/</a>)</td>
</tr>
<tr>
<td>Basic training/education</td>
<td>Master degree in Food Science and Technology</td>
</tr>
<tr>
<td>Since</td>
<td>1994</td>
</tr>
<tr>
<td>Professional training required</td>
<td>None</td>
</tr>
<tr>
<td>Capability test</td>
<td>Professional qualifying examination in the presence of a commission of 5 members (2 University professors, 1 Food technologist professional, 1 from public institution, 1 from food industry): 2 written exams on specific topics indicated in the regulation law and 1 oral exam.</td>
</tr>
</tbody>
</table>

**Why it is regulated?**

In Italy the association of graduated students from the 5-years-university degree in Food Science and Technology acted since the end of ’80 to have an official recognize of the highly specific professional competences and expertise of the Food Technology professionals. In particular those related to quality and safety of food products, food processing, management of food production and distribution that were not covered by any of the already existing professional in Italy.

The interest to regulate the Food Technology professional in Italy was, thus, from one side of public interest (quality and safety of foods) and also to enhance the availability of job positions and consultancy activities for the Food Technologists registered in the Board i.e. professionals with specific skills recognised by a public entity (i.e. Ministry of Justice) that before were taken by other, more generic professionals (Agronomists, Veterinary, Chemists, Engineers, Medical professionals). Minor was the support to the regulation of the Food Technologist professional by public health bodies and food private organisations that were neither able to foresee the multidisciplinary competences of this professional category or to invest in highly qualified employees. Later on, two food industry categories (cattle and animal feed and foods for specific consumer categories, e.g. baby foods, fortified, food supplements) introduced the Food Technologist professional among those categories of professional that could be involved in the quality control and
assessment of the processing as required by the Italian law. The Food Technology professional in Italy is nowadays regarded as a multidisciplinary technical profession with impact on the public health and whose activities respect an ethical code according to the regulation. Since 2002 when the national Board started its activities, the involvement of its representatives as consultant in public entities and projects is progressively increasing. In some universities the representative of the regional board are also included in the commission of accreditation/evaluation/development of the Food Science and technology courses. The FT Boards are active since 2001 and in total ca. 1800 food technology professionals are registered in Italy (data Sept 2010).

<table>
<thead>
<tr>
<th>How it is regulated?</th>
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<tbody>
<tr>
<td>Self-regulation by Associazione dei Laureati nelle Discipline Alimentari (ALDAL, <a href="http://www.aldal.it">www.aldal.it</a>). The law was issued by the Ministry for Justice as all the other regulated profession in Italy. The Law (n. 59, 1994) and the regulation act (DPR 19 July 1999, n.283) defined specifically the activities allowed to the Food technology professional (article 2) and created the Boards at regional (or multi-regional) level and the national Board at which each professional has to be registered.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is regulated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry restrictions: Required qualifications, i.e. the basic education and training and qualifying examination Restriction on activities and ethical code. Minimum salary - Collective agreement is defined by the Ministry of industry; For Food Technology professional consultants, the Board edits a document with the guidelines of “minimum rates” for the various service. There is an annual fee needed to cover national taxes and administrative costs of the Boards (i.e. the Board is an official no profit entity).</td>
</tr>
</tbody>
</table>
Appendix 2 - Details of “Food Technologist” as the regulated profession in Slovenia

<table>
<thead>
<tr>
<th>Country</th>
<th>Slovenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated profession</td>
<td>Food Technologist (in the health sector)</td>
</tr>
<tr>
<td>Basic training/education</td>
<td>Master degree in Food Science and Technology (and still diploma engineer level since we will get first absolvents with MSc degree in Food Science and Technology only in 2012/2013)</td>
</tr>
<tr>
<td>Since</td>
<td>2004</td>
</tr>
<tr>
<td>Professional training required</td>
<td>“Status of beginner” (this training should be done at the employer in the health sector – details are regulated with the official document “Pravilnik o pripravništvu in strokovnih izpitih zdravstvenih delavcev in zdravstvenih sodelavcev na področju zdravstvene dejavnosti (ULRS, št.: 33/04 in 38/06)”</td>
</tr>
<tr>
<td>Capability test</td>
<td>“Professional exam for the employees (co-workers) in the health sector (official document for this is also “Pravilnik o pripravništvu in strokovnih izpitih zdravstvenih delavcev in zdravstvenih sodelavcev na področju zdravstvene dejavnosti (ULRS, št.: 33/04 in 38/06)” Professional (oral) exam should be done at the Ministry for health in the presence of a commission of 3 professionals determined by the Ministry of health.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other data about the regulation of this profession (according to the theory of regulation of profession)</th>
<th>Why it is regulated?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Officially because of the public interest (e.g. protection of health), but also because of the system of public employees (that is why there is a trend to deregulate the professions in Slovenia, where no interest of professional associations is present- this is the case also for profession Food Technologist - a professional organisation should not be interested for regulation of this profession only in the health sector.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How it is regulated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is regulated by the government (Ministry for health).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is regulated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required qualifications:</td>
</tr>
<tr>
<td>- basic education,</td>
</tr>
<tr>
<td>- professional training required,</td>
</tr>
<tr>
<td>- capability test (professional exam).</td>
</tr>
</tbody>
</table>
### Appendix 3 - Details of “Food Engineer” as the regulated profession in Turkey

<table>
<thead>
<tr>
<th>Country</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated profession</td>
<td>Food Engineer  (<a href="http://www.gidamo.org.tr/">http://www.gidamo.org.tr/</a>)</td>
</tr>
<tr>
<td>Basic training/education</td>
<td>BSc degree in Food Engineering (1st cycle)</td>
</tr>
<tr>
<td>Since</td>
<td>1996</td>
</tr>
<tr>
<td>Professional training required</td>
<td>None</td>
</tr>
<tr>
<td>Capability test</td>
<td>None</td>
</tr>
</tbody>
</table>

**Why it is regulated?**

According to Law no. 5996 on Veterinary Services, Plant Health, Food and Feed, food establishments that have equipment power of at least 30 hp and employing at least 10 personnel have to employ a food, chemical or agricultural engineer of related sub-topic or a veterinarian according to the work area. However, some of the establishments have to employ one of these professions without any specified criteria, for eg. meat and meat products processing, functional food production, catering, food irradiating establishments. The Chambers of Food Engineers (CFE) provides a licence to the member who becomes an employer in the establishment. Even more than one food engineer is employed in the establishment, CFE gives licence to only one of them but the others have to be members of CFE.

**How it is regulated?**

Self-regulation by the Chambers of Food Engineers (http://www.gidamo.org.tr). According to Law on.6235 on Union of Chambers of Turkish Engineers and Architects (UCTEA) all engineers have to be a member of the chambers according to their professions. Chambers are democratic organizations having their own elections and with independent public institution power, i.e. a Professional institution considered to be a public institution, originating from the Turkish Constitution. They have the right to make their own regulations on their profession. They also have the right to give punishment to their members because of non-ethical actions. The executive board members are voluntary and are not paid for their services. As the only official representative body of food engineers, Chamber of Food Engineers (CFE) was established in May.
1996 at the 34th General Assembly of Union of Chambers of Turkish Engineers and Architects (UCTEA) as the 23rd chamber. CFE works according to the Main Regulation of CFE published in the Official Gazette in 2006. The mission of CFE is; to satisfy legally the common needs of members, to represent and introduce food engineering profession, working on educational needs, ethics and food policies etc. in the defined legal frame. CFE has a principle to both inform the society and produce information referring scientific knowledge, and independent and objective studies. CFE also give importance to sharing knowledge and experiences with other stakeholders, in addition to food engineers. The prerequisites of membership are also defined in the Main Regulation.

<table>
<thead>
<tr>
<th>What is regulated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry restrictions: Required qualifications, i.e. the basic education and training and qualifying examination</td>
</tr>
<tr>
<td>Restriction on activities and ethical code.</td>
</tr>
<tr>
<td>CFE charge monthly fees from the members. State do not limit the fees but fees are charged at decent levels considering the conditions of other chambers of UCTEA.</td>
</tr>
<tr>
<td>CFE also charges fees from members who are applying for employment licences to be employed in establishments that are obliged to employ an engineer in their sites according to the food legislation.</td>
</tr>
<tr>
<td>If a member is going to have any punishment because of any non-ethical or illegal case, his/her file is evaluated by the Honour Committee of CFE. Any punishment including ban of working rights of that person is charged by the Honour Committee and the decision is announced to the member and to the employer. But, CFE do not charge any fine to the members.</td>
</tr>
</tbody>
</table>
## Appendix 4 - Comparison of some specifics of “Food Technologist” as the regulated profession in Italy and in Greece

<table>
<thead>
<tr>
<th>Country</th>
<th>Italy</th>
<th>Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regulated profession</strong></td>
<td>Food Technologist</td>
<td>Food Technologist</td>
</tr>
<tr>
<td><strong>Basic training/education</strong></td>
<td>2nd cycle degree in Food Science and Technology</td>
<td>1st cycle degree in Food Technology (7 sem. Education + 1 sem of training) Bs in total 4 years</td>
</tr>
<tr>
<td><strong>Since</strong></td>
<td>1994</td>
<td>1982</td>
</tr>
<tr>
<td><strong>Professional training required</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Capability test</strong></td>
<td>Exam (2 written papers on specific food related topics + 1 oral exam) (= Esame di abilitazione). The evaluation is carried out by a committee that included 1 representing person from the Order of TA, 2 professors of the University, 1 representing person from food industry, 1 representing person from food&amp; health related institutes). The exam is given in some Italian Universities as established by national rules under the Ministry of Law as well as Ministry of University.</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Acts required by law to be signed by a recognised professional</strong></td>
<td>D.Lgs n° 111/92, article 10, paragraph 5: it recognises the graduate in Food Science and Technology as responsible of the quality control in all the steps of the process in industries and companies of dietary foods (Note: this law allows also this position to graduate of other university courses such as pharmaceutical technology, biology, chemistry).</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>D.Lgs n° 123/99, article 2, paragraph 6: it recognises that companies that produce pet food and animal feed must have in a permanent position a professional</td>
<td></td>
</tr>
</tbody>
</table>
Report on Deliverable 2.1

<table>
<thead>
<tr>
<th>Professional Rights or where we can work</th>
<th>According to the Italian law n. 59 (18th January 1994), article 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. development, control, testing of food processes also in collaboration with other professional</td>
<td></td>
</tr>
<tr>
<td>b. development, control, testing of food plants also in collaboration with other professional</td>
<td></td>
</tr>
<tr>
<td>c. marketing, distribution, supply of raw materials, half-products and processed foods.</td>
<td></td>
</tr>
<tr>
<td>d. Food analysis in public entities and private laboratories, included packaging testing; definition of quality standards</td>
<td></td>
</tr>
<tr>
<td>e. Judicial examination in tribunals about points a), b), c), d).</td>
<td></td>
</tr>
<tr>
<td>f. Statistics and market surveys related to food production</td>
<td></td>
</tr>
<tr>
<td>g. Research and Development</td>
<td></td>
</tr>
<tr>
<td>h. Study, design, direction, supervisory control, accounting, testing, in collaboration with other professionals, of the aspects related to food production planning, taking into account the existing resources, their potential use and re-sue,</td>
<td></td>
</tr>
</tbody>
</table>

According to the Newspaper of the Government Page Number 36/72-92 article 1 the professional rights of Food Technologists are:

Based on their specialized scientific-technological knowledge, they work either independently or in cooperation with other scientists on the study-research-application of technology on modern special sections of foods and on the process of preservation-process-quality control of foods.

They can work as employees in the private and civil section according to the current regulations or as employees:

- In the production and quality control of Small industries and Industries, as well as in the Control and Food distribution Services.
- Establishment and running of analysis and food control laboratories.
- Involvement in economic-technical studies in order to establish or expand Food Industries.
- Trading – distribution of equipment of Food Small industries- Food Industries and
<table>
<thead>
<tr>
<th>food and nutrition needs of the consumers</th>
<th>Supplementary material industries.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Study, design, direction, supervisory control, accounting, testing, in collaboration with other professionals, of the aspects related to food processing planning based on the local territorial needs</td>
<td>- As experts in market courts and other courts and in Food control Services for the attestation of the quality and appropriateness of foods.</td>
</tr>
<tr>
<td>j. Study, design, direction, supervisory control, management in collaboration with other professionals and international bodies, of international programmes aimed to the agro-food development</td>
<td>- Food Technologists can rise throughout the managerial and technical hierarchy of Food small industries – Food industries- Control Services.</td>
</tr>
</tbody>
</table>

They can work either independently (= consultants, they can sign under they own responsibility projects, certificates of analyses, etc…), or as employees in the private companies and public administrations (Regional Food and Agriculture, Health departments).

- Food Technologists can rise throughout the managerial and technical hierarchy of Food small industries – Food industries- Control Services.
- They can be employed as Executives in Companies based on the Legislation which is in force for the operation of these companies each time.
- Food Technologists are employed in education (in all grades) based on the Legislation which is in force each time. They can be employed as members of Research Groups on topics of their expertise.