European FooD-STA

Deliverable D1.1

Structured Information collection system

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Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including Commission services and projects reviewers)	
CO	Confidential, only for members of the consortium (including EACEA and Commission services and projects reviewers)	

Summary:

Based on the structure of the available data mainly from previous project, the FooD-STA consortium designed a simple system (electronic, questionnaires) available in 7 languages to collect further information to support the needs analysis in the project. The system will collect the information required under task 1.3 "Identification of most relevant needs, conclusion making, recommendation" and the related D1.2 "Report on Findings and Recommendations". It will furthermore serve as basis for the continuous needs collection system, to be implemented in the frame of the FooD-STA centre.

This document describes the implemented tool. The tool itself can be reached via:

English: http://surveyonline-euproject.limequery.com/index.php/973124/lang-en
French: http://surveyonline-euproject.limequery.com/index.php/973124/lang-fr
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1 Introduction

The purpose of the EU FOOD-STA (European Food Studies & Training Alliance) project is to establish and provide a required frame for collaborations between the industry and academic sector in the area of food to enable the exchange of knowledge, demands, ideas, training and staff.

The EU Food Industry represents the single largest manufacturing sector in the EU in terms of turnover, added value and employment. However, the labour productivity is lower than in most other industry sectors, the percentage of higher-level skilled staff is low as well as the ranking in innovation performance. In EU food industry the number of research publication is increasing but the transfer of scientific knowledge & innovation to the industry is limited and for SMEs it is very difficult to get access to and to implement new technologies & knowledge coming from universities. Collaboration between researchers and companies due to:

- Missing placement of students in international companies as well as staff exchange
- difficulties for University teachers to have a precise idea of the food SMEs demand in terms of R&D, innovation, quality, skills
- need of food companies to clearly benefit from additional education and faster access to research results.

In the contest of FooDSTA project a system was set up to include already existing demand and needs but with the main focus to collect and structure new input. This system will support the compilation, structuring and analysis of collected and reported demand and needs from food industry and companies (concerning academic education, training and CPD) as well as results currently in preparation. The additional results useful for this purpose come out from Track_Fast project and Trafoon project.

2   Methodology of FooD-STA Needs collection system

This section describes the approach of the designed questionnaire for compiling, structuring and analyzing collected and reported demand and needs.

In order to make sure that the consortium reaches a large number of SMEs, the questionnaire will utilize different formats, languages and channels. In particular, starting form relevant results coming from projects described in previous section, a questionnaire has been developed and proposed to the project partnership for comments/additions.

The first part of the questionnaire includes questions for the identification of the enterprise typology (food sector, size, employees, etc.) and identification of respondent (position in organization).

⁎ Company general data: position in the organisation
Check any that apply

☐ Entrepreneur/owner

☐ CEO (Chief Executive Officer)

☐ Managing director

☐ Plant director

☐ Research & Development manager

☐ Quality / safety manager

☐ Food technologist

☐ Production manager

☐ Other: [　　　　　　　]

⁎ Company general data: sector
Check any that apply

☐ Meat and meat products

☐ Fish and fish products

☐ Fruits and vegetables

☐ Oils and fats

☐ Dairy products

☐ Bakery and pasta products

☐ Animal feed

☐ Alcoholic beverages

☐ Other: [　　　　　　　]

⁎ Company general data: turn over
Check any that apply

☐ <= 2 million Euro

☐ <= 10 million Euro

☐ <= 50 million Euro

☐ <= 100 million Euro

☐ <= 500 million Euro

☐ > 500 million Euro

⁎ Company general data: number of employees
Check any that apply

☐ 0-9 employees

☐ 10-19 employees

☐ 20-49 employees

☐ 50-249 employees

☐ 250-499 employees

☐ 500-999 employees

☐ 1000-9999 employees

The next section of the questionnaire collects information regarding competences and the related importance of those competences for the companies.

Based on the experience of your organisation/institution/position, please appreciate the importance of the following competencies

Please select at least 5 answers

	Very important	Important	Moderately important	Of little importance	Unimportant	No answer
Technical skills directly related to food processing, food science	○	○	○	○	○	◉
Technical skills for other fields discipline (like biology, genetics, nanotechnology, etc.)	○	○	○	○	○	◉
Practical skills and expertise	○	○	○	○	○	◉
Managerial and business skills	○	○	○	○	○	◉
Marketing and commercial skills	○	○	○	○	○	◉
ITC skills, office management	○	○	○	○	○	◉
Language skills	○	○	○	○	○	◉
Other skills, like legal	○	○	○	○	○	◉

Based on the experience of your organisation/institution/position, please appreciate the importance of the following specific competencies

Please select at least 5 answers

	Very important	Important	Moderately important	Of little importance	Unimportant	No answer
Observe healthy and safe working conditions in the production	○	○	○	○	○	◉
Apply selection criteria and indicators in choosing raw, additional materials and materials and providers reliability	○	○	○	○	○	◉
Organize and controls the technological process of food and beverages production	○	○	○	○	○	◉

						No answer
Monitor the performance of the technological equipment	○	○	○	○	○	◉
Establishment and Control the monitoring system of the critical control points in the implementation of the HACCP plan in food and beverages production	○	○	○	○	○	◉
Control the quality management procedures in food and beverages production	○	○	○	○	○	◉
Monitor the function of the control and measurement devices	○	○	○	○	○	◉
Perform control on the sample taking procedures and their delivery for analysis in the laboratory	○	○	○	○	○	◉
Supervise the best production practices for food handling implementation and their documentation+Sort, generalize and store production process information, using ICT	○	○	○	○	○	◉
Knowledge and application about Traceability systems and procedures of crisis management process	○	○	○	○	○	◉

In the next section, the questionnaire deals with questions related to soft and specific skills.

Based on the experience of your organisation/institution/position please indicate how much you consider helpful to include, within the professional qualification standards, other soft skills as following:
Please select at least 5 answers

	Very important	Important	Moderately important	Of little importance	Unimportant	No answer
Communicating	○	○	○	○	○	◉
Managing Information and Computer Literacy	○	○	○	○	○	◉
Using Numbers	○	○	○	○	○	◉

Thinking & Solving Problems	○	○	○	○	○	◉
Providing Leadership	○	○	○	○	○	◉
Managing Personnel	○	○	○	○	○	◉
Personal Management Skills	○	○	○	○	○	◉
Demonstrating Positive Attitudes & Behaviours	○	○	○	○	○	◉
Being Responsible	○	○	○	○	○	◉
Being Adaptable	○	○	○	○	○	◉
Learning Continuously	○	○	○	○	○	◉
Improving Own Performance	○	○	○	○	○	◉
Ability to work in a team & Interpersonal Skills	○	○	○	○	○	◉
Working with Others	○	○	○	○	○	◉
Participating in Projects & Tasks	○	○	○	○	○	◉
Communicating with Others	○	○	○	○	○	◉
Business Skills	○	○	○	○	○	◉
Business Planning & Strategic Management	○	○	○	○	○	◉
Sales and Marketing	○	○	○	○	○	◉
Finance & Resource Management	○	○	○	○	○	◉
Customer Service	○	○	○	○	○	◉
Corporate Social Responsibility	○	○	○	○	○	◉
Entrepreneurship	○	○	○	○	○	◉
Pedagogical Skills	○	○	○	○	○	◉
Learning & Assessment	○	○	○	○	○	◉
Coping skills to deal with a crisis situation	○	○	○	○	○	◉
Innovation	○	○	○	○	○	◉

Based on the experience of your organisation/institution/position please indicate how much you consider helpful to include, within the professional qualification standards, other food specific skills as following:
Please select at least 5 answers

	Very important	Important	Moderately important	Of little importance	Unimportant	No answer
Quality Management, Quality Assurance & Quality Control	○	○	○	○	○	◉
Food Safety Management, Food Hygiene & Food Safety Control	○	○	○	○	○	◉
Food Legislation & Control	○	○	○	○	○	◉
Skills for Research & Development	○	○	○	○	○	◉
Product Development	○	○	○	○	○	◉
Research	○	○	○	○	○	◉
Consumer and Nutritional Sciences	○	○	○	○	○	◉
Skills for Food Production & Manufacturing	○	○	○	○	○	◉
Engineering Maintenance	○	○	○	○	○	◉
Health, Safety & the Environment	○	○	○	○	○	◉
Production Management & Production Operations	○	○	○	○	○	◉
Internationalization (Export management)	○	○	○	○	○	◉
Cleaning & Preparation	○	○	○	○	○	◉
Control Operations	○	○	○	○	○	◉
Skills for Food Retail & the Supply Chain	○	○	○	○	○	◉
Supply to Production	○	○	○	○	○	◉
Food Service	○	○	○	○	○	◉
Health & Nutrition	○	○	○	○	○	◉
Skills for Logistics	○	○	○	○	○	◉
Transportation	○	○	○	○	○	◉
Skills for Food Processing Sectors	○	○	○	○	○	◉
Meat & Poultry Processing - Production Butchery	○	○	○	○	○	◉
Winemaking	○	○	○	○	○	◉

• Please indicate the specific skills emerging that affect the quality of the work of people employed in manufacturing, quality assurance and safety of food and drink
Check any that apply

☐ Implementation of new technologies, new software or machines and equipment, including those for sustainable, ecological and energy efficient production

☐ Changes in the market and consumer's requirements (principles of healthy eating, impact of new ingredients / substances on the quality of food and beverages and on the human health)

☐ Production of new products, including bio- and eco-products

☐ Changes in work organization and organizational culture within the company

☐ Implementation of new models and management systems

☐ Implementation of new regulation, legal norms and quality standards, etc.

☐ Other: [   ]

COMMENTS: Please add any other comment, recommendation or suggestion, that you consider interesting in relation with the improvement of the qualification of employees in food&drink quality control and safety sector.

The tool is available in different languages and can be reached via the following links:

English: http://surveyonline-euproject.limequery.com/index.php/973124/lang-en
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Portuguese: http://surveyonline-euproject.limequery.com/index.php/973124/lang-pt
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German: http://surveyonline-euproject.limequery.com/index.php/973124/lang-de

3 Appendix

3.1 Annex 1 - Information on Projects used as background for the development of the structured information collection system

Beside the newly collected input, other interesting material for the purpose of FooDSTA will be made available within the new tool from SMES NET project, co-financed under the 6 Framework programme and European Technology Platform (ETP) FOOD for LIFE according to which qualification and training of F&D professionals are main drivers for "acceptance and application of innovation" and "a key component in increasing competitiveness" even if "the investment of the food industry in training for its workforce is lower than necessary and this deficiency is even more apparent within SMEs[1]".

Starting from the thesis that the F&D sector may be losing competitiveness and lacking in innovation because professional FSTs do not have the skills, knowledge and competencies needed by employers, the first step of the project was the identification and definition of personal skills requirements in the food job market in order to identify the skills a FST should have to be competitive.

First of all, TRACK_FAST carry out a study dedicated to define the profile of professional FSTs already working in F&D. Secondly, the project examined what profile would be most desirable in terms of skills, knowledge and competencies and, additionally, what are the ideal places and times to learn these skills. 16 European countries were involved and typology of FSTs from four different employment areas (Industry -SMEs and large, Research, Government, Other e.g., retail).

On the basis of responses from a total of 315 FSTs and/or FST managers coming from the four employment areas and supplied a total of 4273 ideas for ideal FST skills, 3348 skill ideas were analysed.

3.1.1 The TRACKFAST project

The main objective of TRACK_FAST project was the identification of the training and career requirements of future European food scientists and technologists (FST), and implementation of a European strategy to recruit the next generation of FST leaders.

The most frequently mentioned ideal skill overall was Communicating, followed by Thinking & Solving Problems and Demonstrating Positive Attitudes & Behaviours.

The number of food sector skills was 792, i.e. 19 % of the ideal skills provided. The three most desired among the 15 food sector skills identified were Product Development, Food Legislation & Control and Food Safety Management, Food Hygiene & Food SafetyControl[2].

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[1] ETP Food 4 Life, Strategic Research and Innovation Agenda (2013-2020 and beyond). http://www.fooddrinkeurope.eu/uploads/press-releases_documents/SRIA_ETP_Food_for_Life_2012.pdf

[2] See Annex 1

Additionally, food skills viewed as important by policy makers and perhaps also by the general public, e.g. sustainability and environmental issues on the one hand and nutrition and healthy diet on the other, were not commonly found in current FSTs.

The results clearly indicate a need for further attention to skills in the FST workforce. Qualification and training of F&D professionals is necessary for innovation, yet it has recently been noted that F&D does not make the necessary investment in its workforce (European Technology Platform, Food for Life, 2012).

3.1.2 The TRAFOON project

The TRAFOON project - Traditional Food Network to Improve the Transfer of Knowledge for Innovation - was implemented in order to develop solution for supporting Food SMEs increasingly under pressure for the opening of markets, the increasing demand of standardized and price competitive food products by the consumers, the rising importance of large retailers, and the challenges of conforming to governmental regulations. These factors put at risk many traditional foods as well as traditional processing techniques still available today. To survive and to partake in these modern consumer markets, SMEs producing traditional foods must extend their skills, both in terms of business development and production techniques, to comply with existing European regulations and to promote the aspects of their products related to nutrition and health.

To support traditional SMEs, TRAFOON tried to establish a knowledge transfer network with a focus on food products made of grains, fish, fruits, vegetables and mushrooms to support traditional food producing SMEs. The TRAFOON network interlinked researchers, knowledge transfer agents, and SME associations in 14 European countries to foster sustainable innovation and entrepreneurship in the sector of traditional foods for the benefit of the regions of Europe and the European consumer.

The project purpose was the increasing of interaction between traditional food SMEs, SME associations and research institutes to enhance the knowledge transfer towards SMEs and to enable research topics that are needed by European food SMEs. Within the project, needs of SMEs has been investigated all over Europe. These needs have been matched with available innovations.

For the purpose of FoodSTA project the deliverable report 6.2 and 7.2 - List of detailed and up-to-date R&D&I - have been analysed.

The activity carried out by means of multi-stakeholder workshops focused on four main product: fish, grain, vegetables and mushrooms, fruit and olives and the objectives was the identification of research, development and innovation needs in food quality and food safety[3] .

Moreover, a list of common needs to all product has been identified.

The main needs transverse to all product are related to marketing and labelling, and legal aspects including certification.

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[3] See Annex 2 for results.

Marketing: considering that the most prominent needs in this ambit are the advertisement of products properties (health, allergies, special components) and how can they turn the product appellative to consumers, the main gaps of SMEs are a lack of marketing and communication strategy, digital marketing absence, lack of products recognition by final consumers and unappealing design of packaging.. These issues are frequently related to the lack of resources, human and financial, and/or due to the lack of qualification of the teams.

Labelling: there is a common need to standardize procedures and define common regulations/standards. The SMEs have some difficulties in investing in their image or in changing the appearance of their products; also the frequent changes in legislation force a constant update on labels that many companies cannot support.

Certification: a common need is the certification of traditional products and raw materials according the EU schemes. The necessity of product patenting, certification and quality ensure and safety is related to legal aspects that might not be easy to address and understand. These legal requirements can prevent, or in some ways condition, the trading of the products at national and/or international level. The implementation of standards can be a long process with multiple steps, and tasks assigned, that can be extended for a long period of time. Also there are many different kinds of certification that each product, process or company can apply to or request (organic, PDO, PG, TSG …).

3.1.3 The SMEs-NET project

The SME's-NET is a project co-financed under the 6 framework programme with the objective of providing the consumers of the European Union and selected Associated Countries with better and healthier food though a more demand driven scientific research on food safety innovation, nutritional values, raw materials and food technology.

The project overall objective aimed to address the major identified problems of the current limited integration and communication between the activities of the Food Quality and Safety Stakeholders (FQSS), namely: primary food producers, consumers, scientists (researchers and nutritionist) and processing SMEs themselves as well as policy makers and relevant public administration bodies. In SMEs-NET rationale, these imperfect integration and communication was largely due to actual limited capacity of each group to understand the other groups' needs and legitimate interests and the lack of a common forum for discussing key issues of concern.

In the context of the project a vision paper was edited with the ambition of correlating in a rational design the factors that can drive a positive evolution of the Food and Drink industry (F&D) by describing those measures and strategies that can stimulate Small and Medium-sized Enterprises (SMEs) to employ innovation more widely.

Concerning the ambit of training and transfer of knowledge, according with the results of the SMEs-NET project, the percentage of particularly skilled workforce was a major determinant of "quick thinking" companies.

In particular, an high percentage of skilled workers represents a sign of intrinsic positive attitude to innovation, irrespective of any other factor of the company. The presence of skilled workers in the micro and small company can represent an important element of innovation in a context where absolute numbers are low.

Crucial is the kind of "collaborative mix" that the working units, especially skilled staff, put into practice within their enterprises or within their departments. Details here are important and may add new unexpressed evidence to the topic under examination.

In general terms it once more confirmed that increased firm size (in terms of turnover and/or number of employees) was positively correlated with a strong appreciation of the role of workforce as a major factor of influence with respect of innovation. This revealed, at one end of the explicatory range, that greater enterprises have more skilled workers (expressed for example as percentage of people with a university degree). The speed at which this happens is nonetheless higher in the transition from micro-small to medium size enterprises.

Medium size enterprises were those that in proportion employ in higher degree personnel with a university diploma; it seems that those firms are more familiar with highly educated workers compared to others.

These phenomena show how the importance of the human factor for innovation is essential.

3.1.4 FooDrinks project

FooDrink is an EU project co-financed under Lifelong Learning Programme, Leonardo Da Vinci.

The project aimed the development of a partners network of European organizations with a target the improvement the quality
of education and employability of students and trainees as technician/technologist in food&drink quality control and safety, improving the standard for acquiring professional qualification and the VET programmes.

One of the main outcomes of the project was a report about identified competencies at European Level concerning the training of persons associated with the operational processes of monitoring, control and management of good practices systems, safety and quality of production.

The analysis was carried out starting from 3 forms of workers: graduates, technicians and skilled workers in 7 different countries (France, Hungary, Romania, Greece, Turkey, Bulgaria, Spain).

Making a difference between food SMEs (>250 employes) and large enterprises (<250 employes), the companies were asked to express the importance for graduate, technicians and skilled workers of some competences[4].

The results shows that skills related to food process are much more asked in SMEs than in large companies (higher importance). The first competence requested for SMEs and large companies and for the three workers categories is "Technical skills related to food processing, food science", the second is "Practical skills and expertise" . For graduated workers both in SMEs and large companies a relative importance is also attributed to "Managerial and business skills", "Marketing and commercial skills" and "Language skills".

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[4] Please see Annex 3

3.1.5 Source TRACK-FAST project, D1.3

Table 3. Skills provided by workshop participants. (no. of skills provided)

Non-Sector or Soft Skills (2256)	Food Sector Skills (792)
Fundamental Skills	Skills for Food Quality & Food Safety
Communicating (448)	Quality Management, Quality Assurance & Quality Control (95)
Managing Information and Computer Literacy (154)	Food Safety Management, Food Hygiene & Food Safety Control (111)
Using Numbers (40)	Food Legislation & Control (120)
Thinking & Solving Problems (292)	Skills for Research & Development
Providing Leadership (121)	Product Development (223)
Managing Personnel (25)	Research (64)
Personal Management Skills	Consumer & Nutritional Sciences (20)
Demonstrating Positive Attitudes & Behaviours (313)	Skills for Food Production & Manufacturing
Being Responsible (245)	Engineering Maintenance (23)
Being Adaptable (133)	Health, Safety & the Environment (48)
Learning Continuously (98)	Production Management (23)
Improving Own Performance (12)	Production Operations (15)
Teamworking & Interpersonal Skills	Cleaning & Preparation (4)
Working with Others (223)	Control Operations (16)
Participating in Projects & Tasks (32)	Skills for Food Retail & the Supply Chain
Communicating with Others (55)	Supply to Production (1)
Business Skills	Food Service (8)
Business Planning & Strategic Management (144)	Health & Nutrition (15)
Sales and Marketing (81)	Skills for Logistics
Finance & Resource Management (84)	Transportation (4)
Customer Service (17)	Skills for Food Processing Sectors
Corporate Social Responsibility (3)	Meat & Poultry Processing - Production Butchery (1)
Entrepreneurship (15)	Winemaking (1)
Pedagogical Skills	
Learning & Assessment (21)	

3.2 Annex 2 - Source TRAFOON project, D6.2

Table 1: List of identified R&D&I needs concerning food quality

Identified R&D&I needs concerning food quality				
Elements	**Fish**	**Grain**	**Vegetables + Mushrooms**	**Fruits + Olives**
Consistent quality of raw material and end products	X	X	X	X
Storage capacity of raw material and end products		X	X	X
Cooling capacity of raw material and end products			X	X
Transportation/distribution capacity and efficiency		X	X	X
Prolonged shelf life (i.e. gluten free products, soft fruit, products without heat treatment)	X	X	X	X
Information flow within food supply chain		X	X	X
Usage of new technologies (i.e. including gluten-free applications, RAS)	X	x		X
Knowledge and awareness problems (i.e. including complexity of gluten-free and health issues; health and nutritional properties of own products)	X	X	X	X
Packaging		X	X	X
Oxidation avoidance			X	
Irrigation and water supply			X	
Fertilization			X	
Selection/breeding techniques	X	X	X	X
Authenticity		X		X
Taste, texture and sensory performance of product (i.e. batch inconsistency, influence of weather conditions)		X	X	X
Feed quality and feeding techniques	X			
Monitoring of end products		X	X	X

Table 2: List of identified R&D&I needs concerning food safety

Identified R&D&I needs concerning food safety				
	Fish	**Grain**	**Vegetables + Mushrooms**	**Fruits + Olives**
Pest and disease control	X	X	X	X
Chemical/biochemical contaminants (i.e. toxic compounds from raw materials and processing, residues of pesticides, disinfectants, gluten contaminations)		X	X	X
Biological contaminants (i.e. mold, bacteria, poisonous mushrooms)	X	X	X	X
Authenticity	X	X		
Physical contaminants (i.e. metal, glass and plastic particles)		X	X	X
Outdated equipment and facilities depends on European region	X		X	
Phytosanitary requirements and residues (i.e. used premises, MRLs, substitutes for banned substances)	X		X	X
Hygiene (i.e. crop and human resources)		X	X	X
Packaging (i.e. used material, unit sizes)		X	X	X
Cold chain interruption	X		X	X
End product cross contamination		X	X	
Labelling (i.e. allergy issues)	X	X		
Monitoring of end products	X	X	X	

3.3 Annex 3 - Source FooDrinks project, EU competences

Competences

Technical skills directly related to food processing, food science

Technical skills for other fields disciplines (like biology, genetics, nano-technology, etc)

Practical skills and expertise

Managerial and business skills

Marketing and commercial skills

ITC skills, office management

Other skills, like legal

Language skills