INNOVATIVE TOOLS AND STRATEGIES FOR THE IMPLEMENTATION OF FOOD PROFESSIONAL
SKILLS AND EXPERTISE IN A LIFELONG LEARNING PERSPECTIVE

Cristina L.M. Silva

CATÓLICA PORTO
ESCOLA SUPERIOR DE BIOTECNOLOGIA

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Context

Facts and Figures about Europe's Largest Manufacturing Industry (2010):

- It is a fragmented industry with 274,000 companies, 99.1% of which are small and medium enterprises (SMEs);
- It purchases and processes 70% of EU agricultural production;
- It contributes to a positive trade balance of around €9.8 billion;
- It offers over 500 million consumers a wide range of safe, nutritious, affordable food and drink products every day.

Employs 4.1 million people in 274,000 companies

Turnover €956.2 billion

It exports €65.3 billion in food and drink products to third countries

Annual Report 2011

European Food Sector:

- Employs 4,1 million people in 274,000 companies - *Leading employer in the EU manufacturing sector (14.6%)*
- Fragmented industry, being 99,1% SME's - *48.7% of food and drink turnover; 63.0% of food and drink employment*
- Purchases and processes 70% of EU agricultural production
- Annual turnover of €956,2 billion - *Largest manufacturing sector in the EU (16.0%)*
- Exports €65,3 billion to third countries - *EU market share in global exports 17.8%*

>>> **INTRODUCTION**

Program

Food, Agriculture and Fisheries, and Biotechnology
Knowledge-Based Bio-Economy (KBBE)

Call FP7-2008-KBBE-2B

Area 2.2.3
Food Processing

KBBE-2008-2-3-03
Training and career development
for future food scientists

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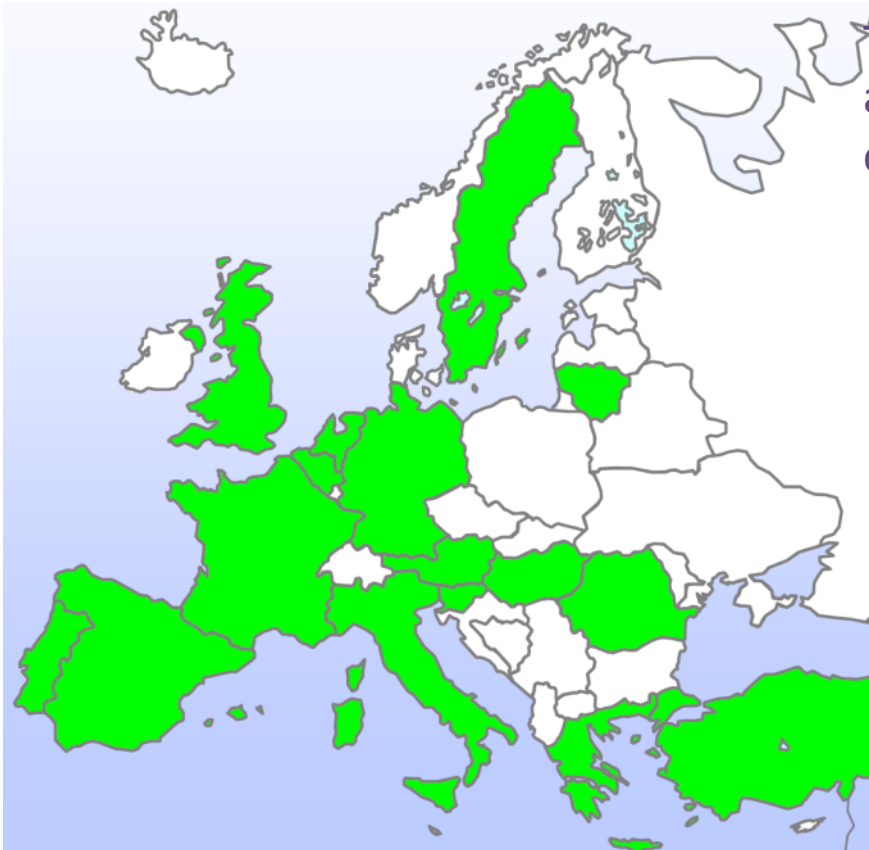SEVENTH FRAMEWORK PROGRAMME

Objective

Identification of the training and career requirements of future European food scientists and technologists (FST),

and the implementation of a European strategy to recruit the next generation FST leaders

"Life cycle" of a Food Professional

Industry Governmental Research Consultancy ....

Career Development

work experience

Planning

Training

Food scientist

Food technologist

Family Life and Basic Studies

BsC → MsC → PhD

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Intervention

Skills and Competences

Workforce with high potential individuals

Choice of area of studies

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Consortium

TRACK_FAST provides main stakeholders with a forum within which their main needs are considered

- ❖ representatives of European and national professional organisations,

- ❖ research centres,

- ❖ academic bodies,

- ❖ multinational companies,

- ❖ SME associations,

- ❖ associations specialized in training members for the food industry,

- ❖ quality assurance experts.

Consortium

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Logical Framework

Update education/training based on actual and future food job market needs

Establishment of a framework for continual professional training and career development for the FST professionals

Regulation of FST professions in Europe

Promotion of FST to attract students

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>>>   **Outcomes**

>>>   Identification and definition of personal skills requirements in food job market

Organization of Brainstorming Workshops

"… 16 workshops were organized, one in each of the 16 partner countries…"

Aiming to answer the questions:

1) *Which competencies should a FST have to be competitive in the job market and to provide the skills needed by employers?*

&

2) *How and when should these competencies be acquired?*

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	GOV	IND	RES	OTH	TOTAL ATTENDEES
Austria	1	2	4	0	7
Belgium	0	8	4	0	12
France	2	0	0	5	7
Germany	1	4	7	0	12
Greece	2	5	10	5	22
Hungary	7	6	7	5	25
Italy	2	4	4	0	10
Lithuania	8	10	4	0	22
Netherlands	0	1	1	1	3
Portugal	4	14	5	3	26
Romania	2	6	15	0	23
Slovenia	5	7	6	5	23
Spain	2	12	1	1	16
Sweden	21	15	24	26	86
Turkey	4	6	4	0	14
UK	1	2	3	1	7
	62	102	99	52	315

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Ideas for ideal skills from workshops

- A total of **4273 ideas for ideal skills** were provided by 315 workshop participants.

- 22 % were excluded from analysis because they either did not contain all required information (60 skill ideas) or agreement was not reached on the code (865 skill ideas).

Central	East	North	South
Austria	Hungary	Belgium	Greece
France	Lithuania	Netherlands	Italy
Germany	Romania	Sweden	Portugal
Slovenia	Turkey	UK	Spain

3348 skill ideas for the analysis

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Skill groups from WP3 document

Section I. Non-sector specific skills

1. Fundamental Skills
1.1. Communicating
1.2. Managing Information and computer literacy
1.3. Using Numbers
1.4. Thinking & Solving Problems
1.5. Providing Leadership
1.6. Managing Personnel

2. Personal Management Skills
2.1. Demonstrating Positive Attitudes & Behaviours
2.2. Being Responsible
2.3. Being Adaptable
2.4. Learning Continuously
2.5. Working Safely
2.6. Improving own performance

3. Teamworking and interpersonal Skills
3.1. Working with Others
3.2. Participating in Projects & Tasks
3.3. Communicating with Others

4. Business skills
4.1. Business Planning and strategic management
4.2. Sales and Marketing
4.3. Finance and resource management
4.4. Customer Service
4.5. Corporate social responsibility CSR
4.6. Entrepreneurship

5. Pedagogical skills
5.1. Learning & Assessment

Section II. Sector non- specific skills

6. Skills for food quality and food safety
6.1. Quality management, quality assurance and quality control
6.2. Food safety management, food hygiene and food safety control
6.3. Food legislation and control

7. Skills for Research and development (R&D)
7.1. Product Development
7.2. Research
7.3. Consumer and nutritional sciences

8. Skills for Food Production and manufacturing
8.1. Engineering Maintenance
8.2. Health, Safety and the Environment
8.3. Production Management
8.4. Production Operations
8.5. Cleaning and Preparation
8.6. Control Operations
8.7. Waste Disposal

9. Skills for food retail and the supply chain
9.1. Food Retail
9.2. Goods Received and Storage
9.3. Supply to Production
9.4. Pick and Pack
9.5. Livestock Droving
9.6. Food service
9.7. Health and nutrition

10. Skills for Logistics
10. 1. Transportation

Section III. Sector specific skills

11. Skills for food processing sectors
11.1. Meat and Poultry Processing - Preparation and Abattoirs
11.2. Meat and Poultry Processing - Production Butchery
11.3. Meat and Poultry Processing - Retail Butchery
11.4. Fish and Shellfish Processing
11.5. Dairy products
11.6. Brewing Production
11.7. Beer Packaging
11.8. Milling and Cereals
11.9. Dough and Dough Products
11.10. Flour Confectionery
11.11. Chocolate
11.12. Sugar Confectionery
11.13. Winemaking
11.14. Canned Fruit and Vegetables
11.15. Crisps, Snacks and Nuts
11.16. Dietetic Food
11.17. Desserts
11.18. Frozen Food
11.19. Seasonings and Spice
11.20. Soft Drinks and Fruit Juices
11.21. Soups
11.22. Jams and marmalade
11.23. Tea and Coffee
11.24. Vegetarian food
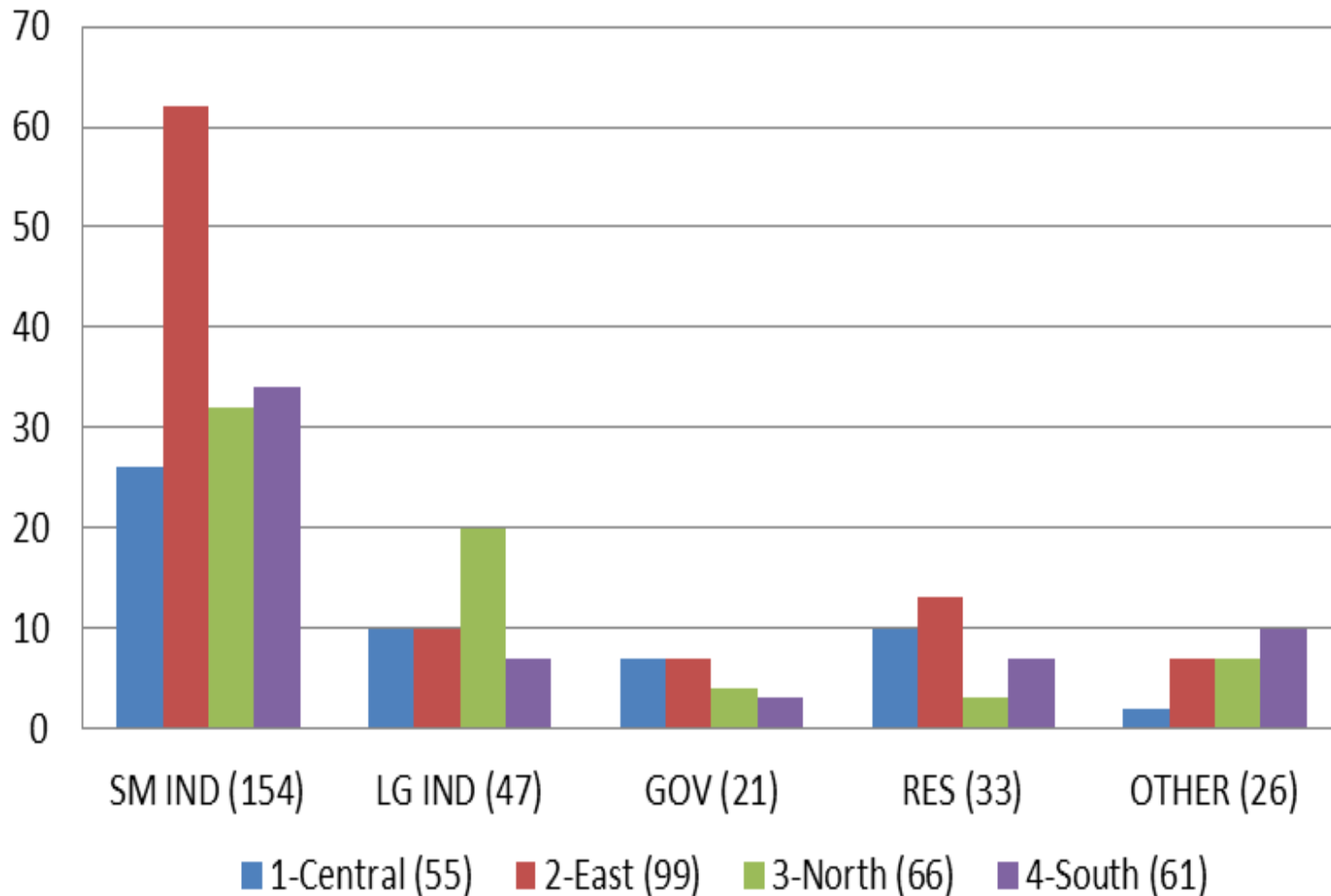11.25. Ready-to-eat meals

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Distribution of skill ideas
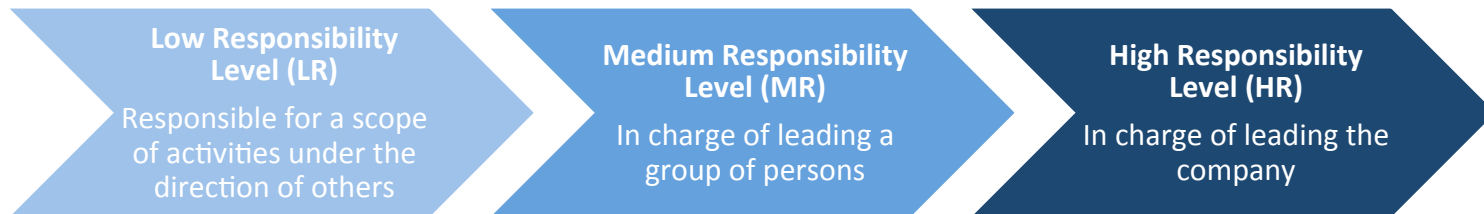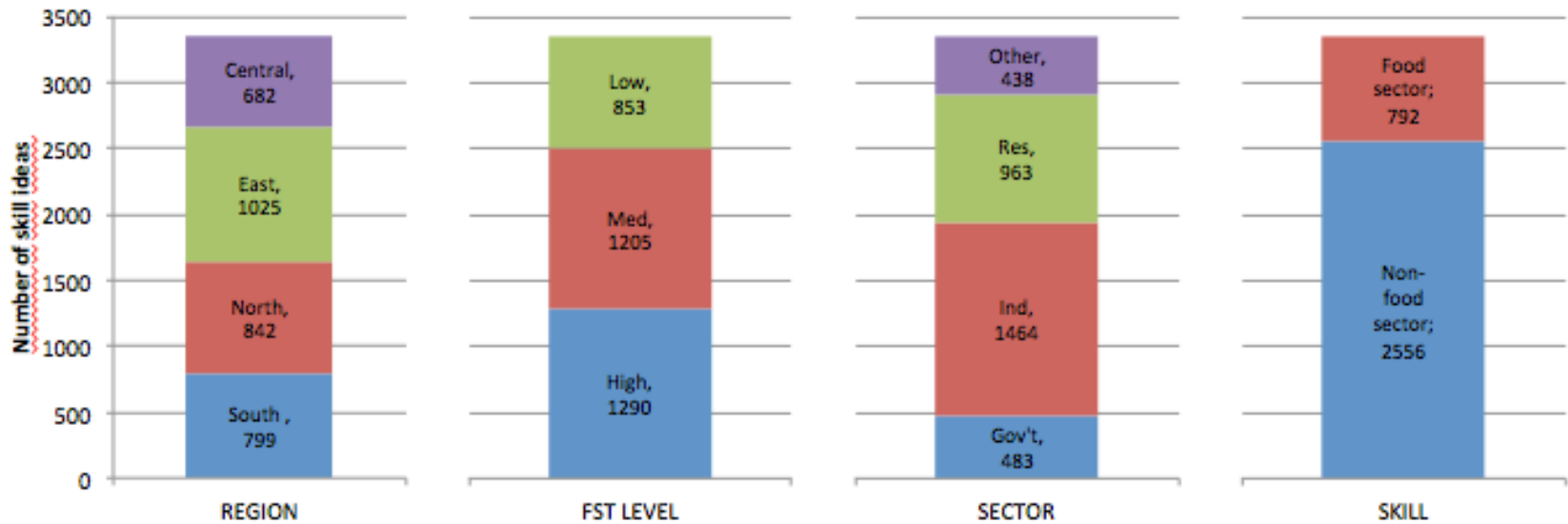
Top three ideal skill ideas
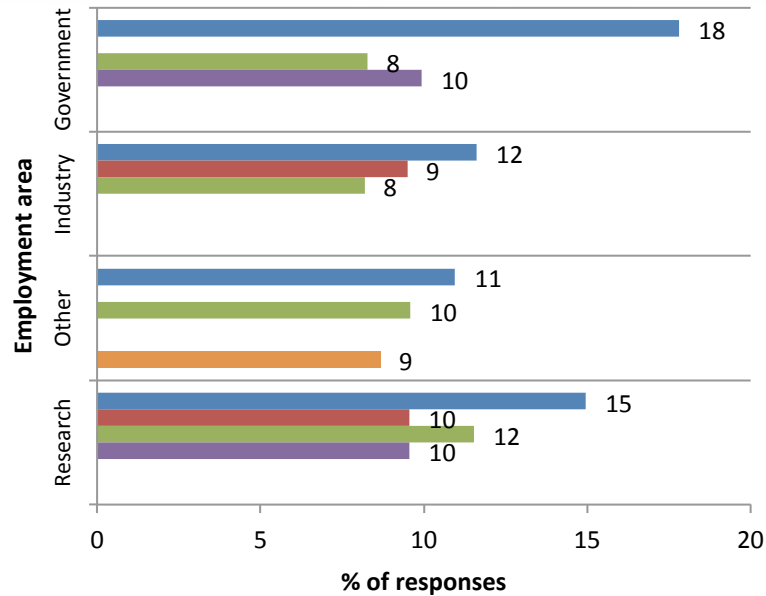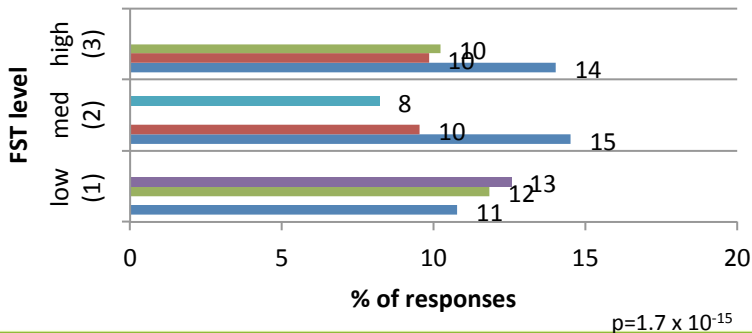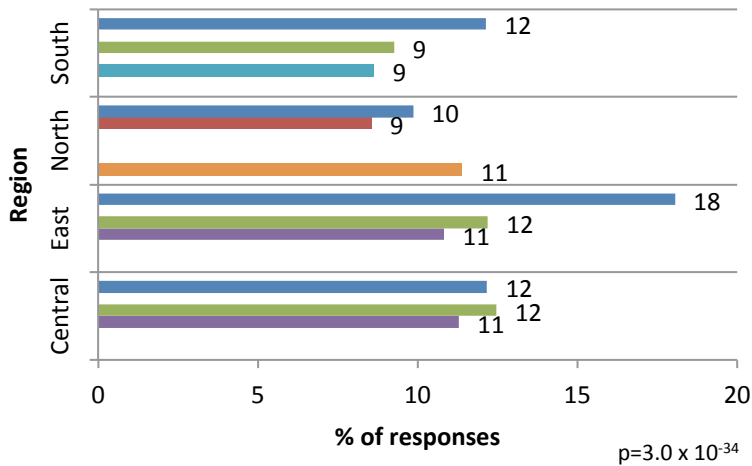
Top three ideal food skill ideas

Region (% of responses), p=0.025

- South: 13, 15, 27
- North: 17, 12, 29
- East: 17, 23, 22
- Central: 11, 20, 35

FST level (% of responses), p=6.3 x 10⁻⁴

- high (3): 13, 19, 25
- med (2): 13, 19, 28
- low (1): 14, 15, 32

Employment area (% of responses), p=1.8 x 10⁻¹⁰

- Government: 12, 12, 28, 29
- Industry: 17, 13, 27
- Other: 14, 11, 30
- Research: 16, 29, 21
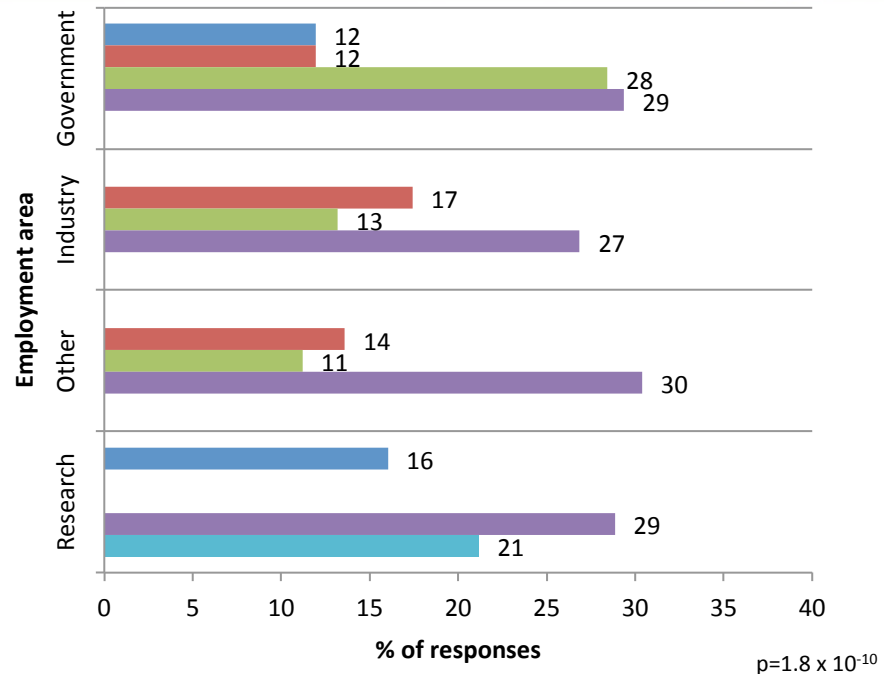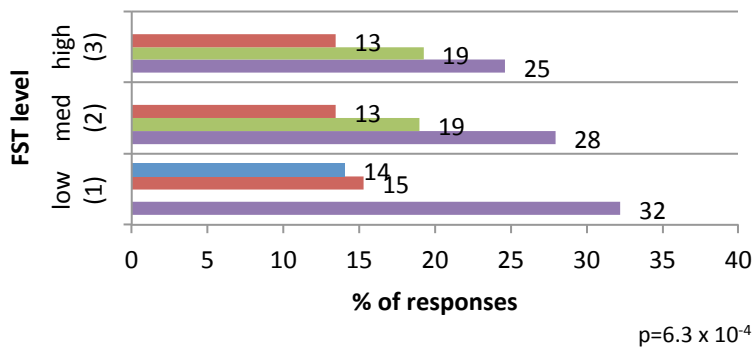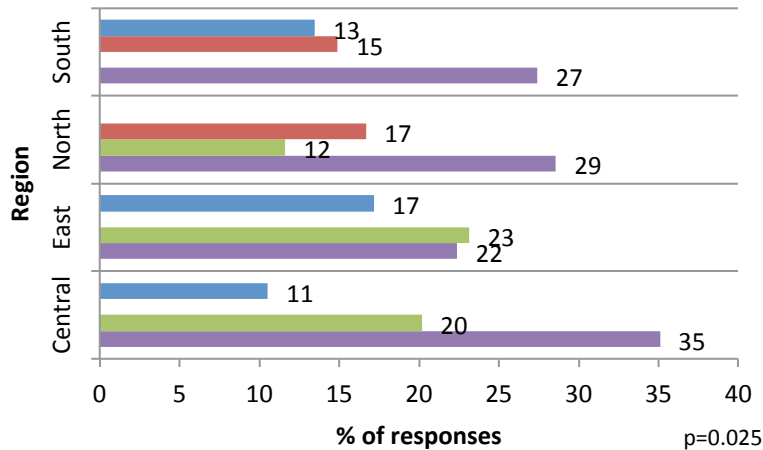
Legend:
- Quality management, quality assurance and quality control
- Food safety management, food hygiene and food safety control
- Food legislation and control
- Product Development
- Research

Chi square test
Null hypothesis:
The most desired FST skills are independent of employment area, region and FST level.

Strongly rejected.

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Current FST situation

Questionnaire Analysis (281)

Degrees held by currently employed FSTs

University Degree

Degree in FST

Certification

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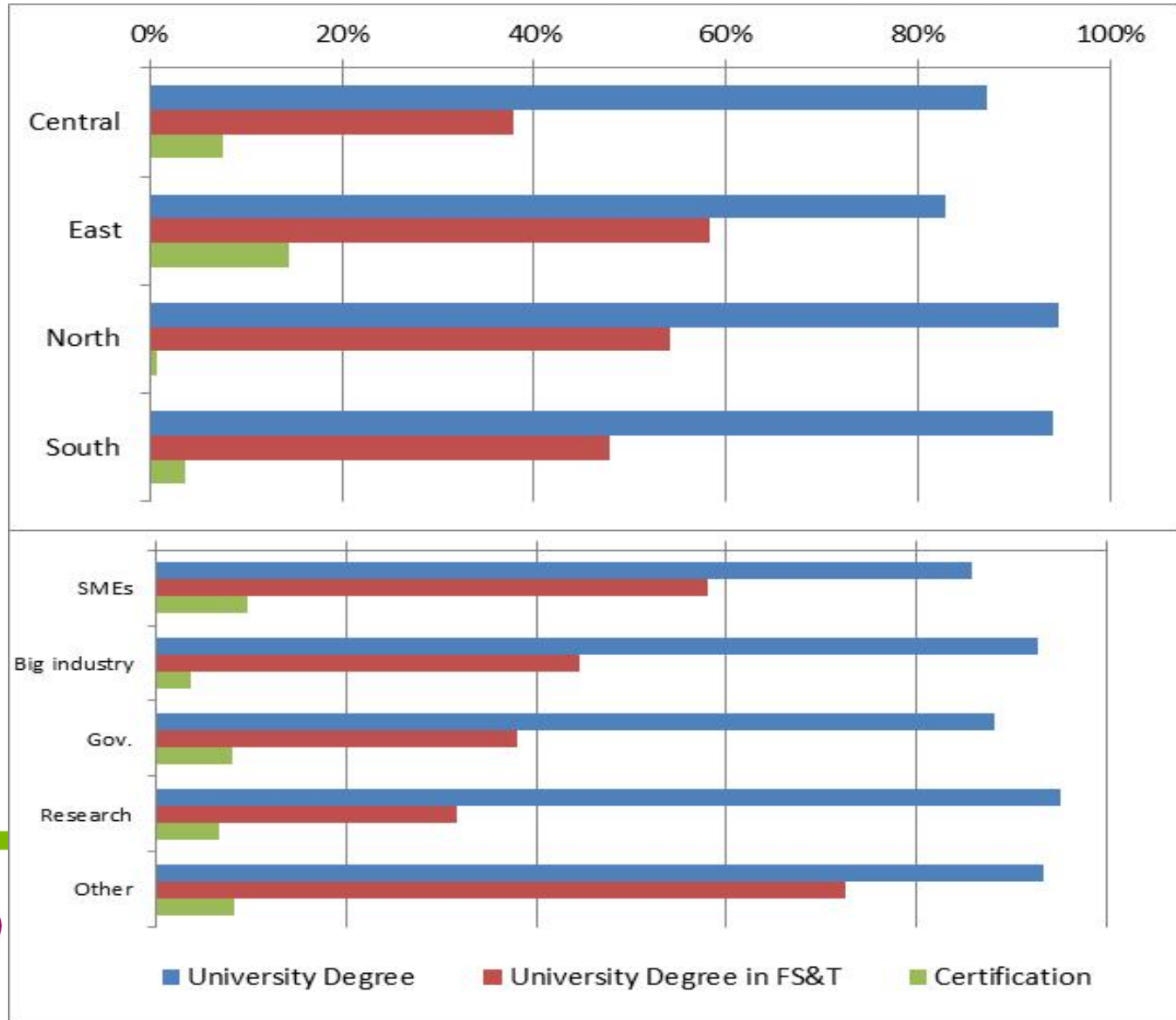
Nature of the FST degree

FSTs with a

Bachelor's

Master's

PhD

in FST

% of BsC in FST   % of MsC in FST   % of PhD in FST
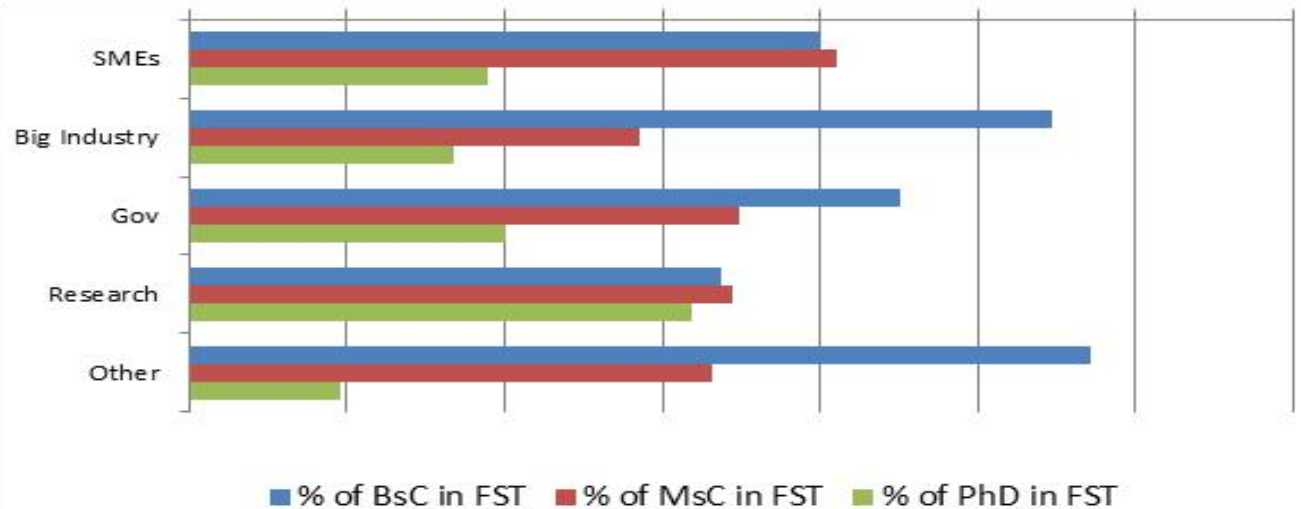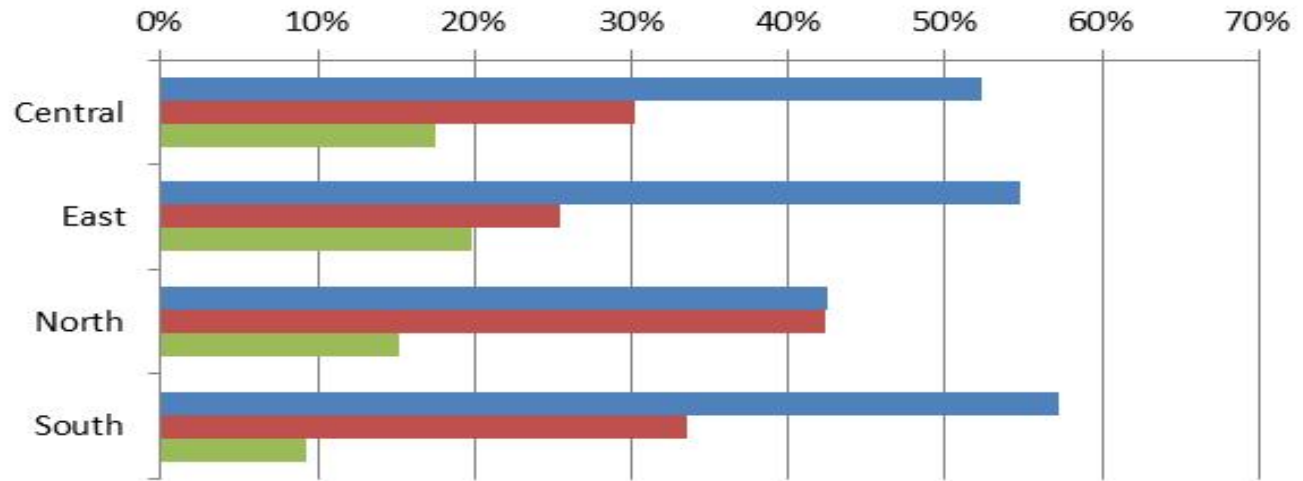
"How satisfied are you with employees that are new graduates in FST?"

97% are either

"Very satisfied, they have excellent knowledge and skills"

Or

"Somewhat satisfied, they need further training or experience"

Top Soft Skills in Currently Employed FSTs
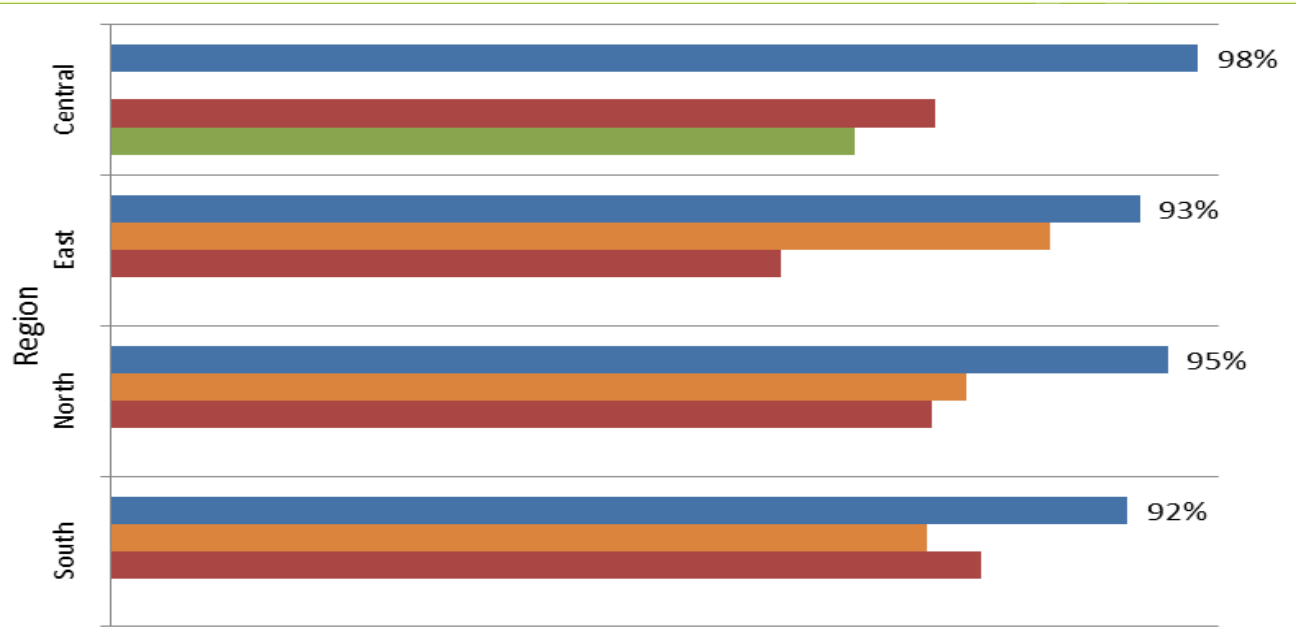
Legend:
- Communicating
- Managing Information & Computer Literacy
- Working With Others
- Participating in Projects & Tasks

Region

Region	Communicating
Central	98%
East	93%
North	95%
South	92%

Employment Area

Employment Area	Communicating
SME	95%
Big Ind	96%
Research	91%
Gov't	86%
Other	88%

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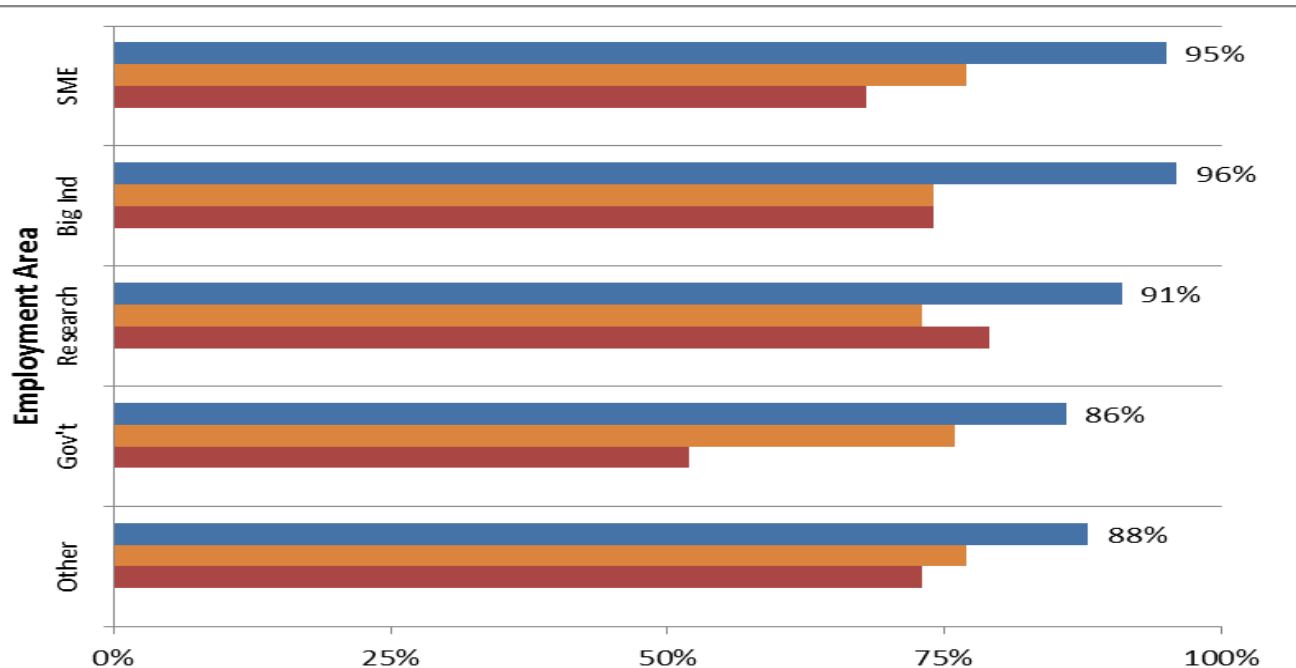
Top Food Skills in Currently Employed FSTs

Legend:
- Food Safety Management, Hygiene & Safety Control
- Product Development
- Quality Management, Assurance & Control
- Production Management/Operations
- Food Legislation & Control
- Research

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Region
- Central: 75%
- East: 76%
- North: 87%
- South: 89%

Employment Area*
- SME: 76%
- Big Ind: 88%
- Research: 88%
- Gov't: 81%
- Other: 77%
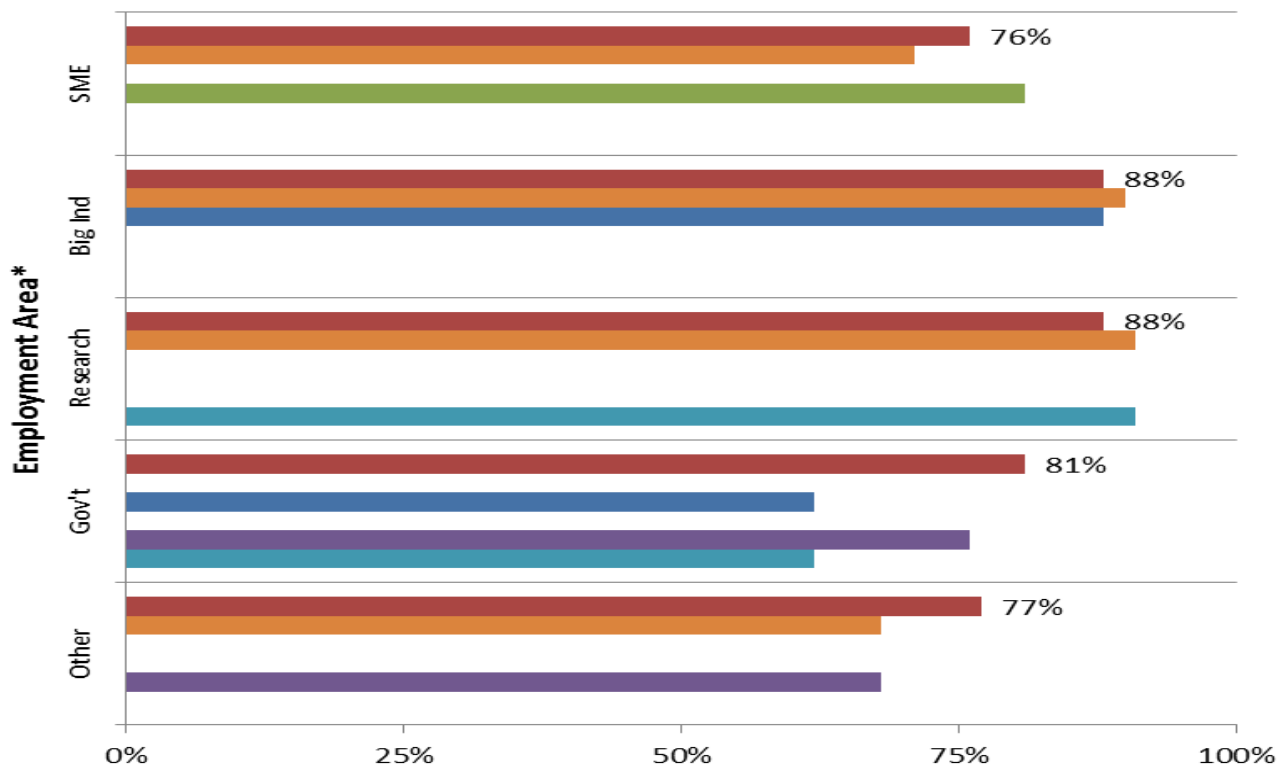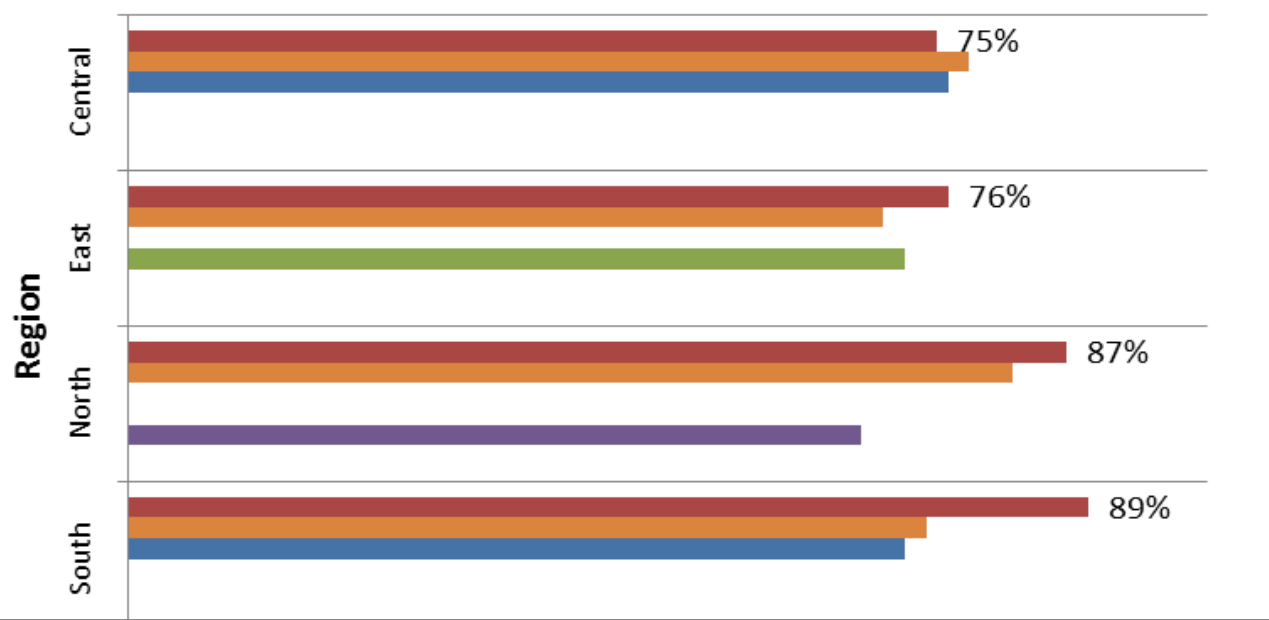
Highlights

- Employers of food scientists & technologists (FSTs) told us which skills they desire

- "Communicating" was the no. 1 skill desired by all FST employers

- Training in communication skills should primarily take place in school, before and during university, but the suggested frequency of such training was close to "continuous", indicating that education during work life is also important for this skill.

- Overall, "soft" skills are more in demand than food sector specific skills

Highlights

- "Product Development" was the no. 1 food sector specific skill

- This skill should primarily be learned in the workplace, but preceded by university training

- Desired skills varied by geographical region, FST level and employment area

- All employers in all areas mentioned soft skills much more than food sector skills. This may reflect a general satisfaction with the food sector-specific skills found in current FSTs

Highlights

- The comparison with the current situation showed that in general FSTs have the skills that are considered ideal. This is good news!

- However, current FSTs have almost the same competence in soft and food specific skills while, ideally, FSTs should have many more soft skills. The message seems to be that we need more soft skills and more varied soft skills

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>>> Developments for the regulation of food science and technology professions in Europe
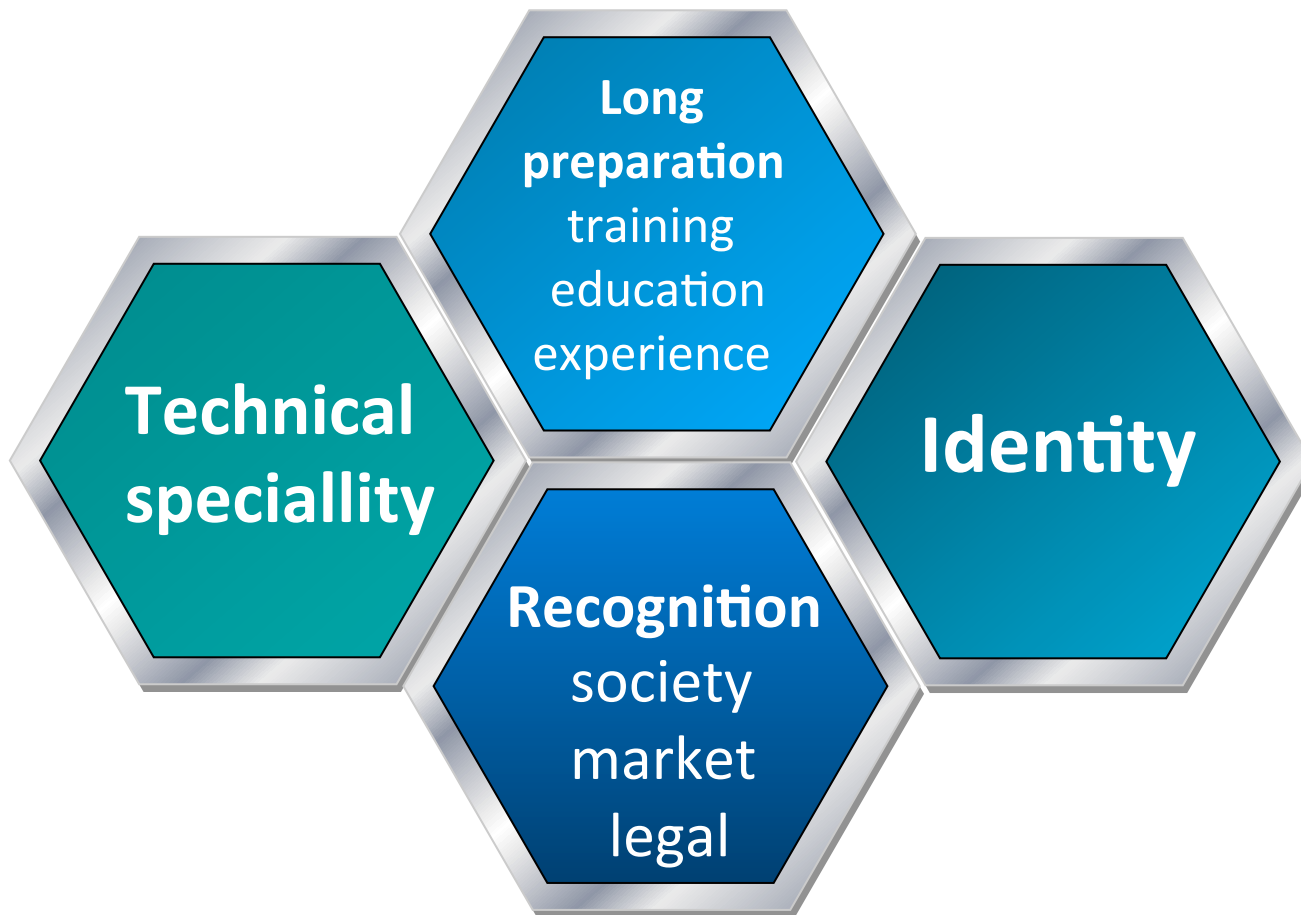
Groups related to the profession

- **Education/training institutions** that prepare technically and are the first socialization environment of the respective professionals

- **Professional associations** that promote values, autonomy and authority of the professionals

- **Licensing system** that protects authority and prestige of professionals and assures the social control

Highlights

- From the whole work performed it was concluded that the <u>issue about regulated professions in the field of food science and technology in Europe is important and it needs an improvement</u>. However, it is evident also that this is a <u>complex task</u>

- At the same time there is also a debate about the possibility to <u>deregulate the professions</u>, with the idea that this will <u>decrease the costs</u> of regulation, <u>remove</u> the informational barriers and <u>complex</u> formal procedures and thus <u>increase competition</u> that will generate quality and liberate transfer on the international job market

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Comparison of actual with recommended career paths

Survey (visit Poster)

Actual career path

Basic background data

Selected parameters for career path characterization

Education and training through the career path

Workshops

Recommended career path

Top skills and top food skills demanded by the employers

Where and when (frequency) the skills have to be acquired.

Low Responsibility Level (LR)
Responsible for a scope of activities under the direction of others

Medium Responsibility Level (MR)
In charge of leading a group of persons

High Responsibility Level (HR)
In charge of leading the company

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>>> Establishment of a framework for continual professional training and career development for the FST professional

✓Establishment of a framework for ~~~~~~~~~~~~ aining and career development for the FST prof

Better prepared PROFESSIONALS

www.foodcareers.eu

✓Motivation of young peop
science and technology in Europe .

MORE PROFESSIONALS

www.foodgalaxy.eu

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food careers

Username

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go

| Home | About Foodcareers | Members | Profession Development | Training courses | Events |

foodcareers

European network for continual professional training and career development for the Food Professional

Join us!

Members

Networks

Profession Development

Training Courses

latest news

Publication of Knowledge and Skills draft document version 2.0
03.2012

upcoming events

PAS 220 : 2008 & FSSC 2200
Read More

who's on-line

There are currently *0 users* and *2 guests* online.

AIMS:

bringing together graduates and professionals working in the food sector, both in industry and academia

creation of an online network for continual professional training and career development for Food Scientists and Technologists in Europe

social networking and providing the guidance and tools for creating and maintaining a continual professional development portfolio

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www.foodcareers.eu

How does it help the food professional?

- The on-line Continuing Professional Development Portfolio

- Information on training

- Social Networking

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Registration process

Registration process

- Implementation of social network functions (connection to facebook etc.) in order to attract more visitors
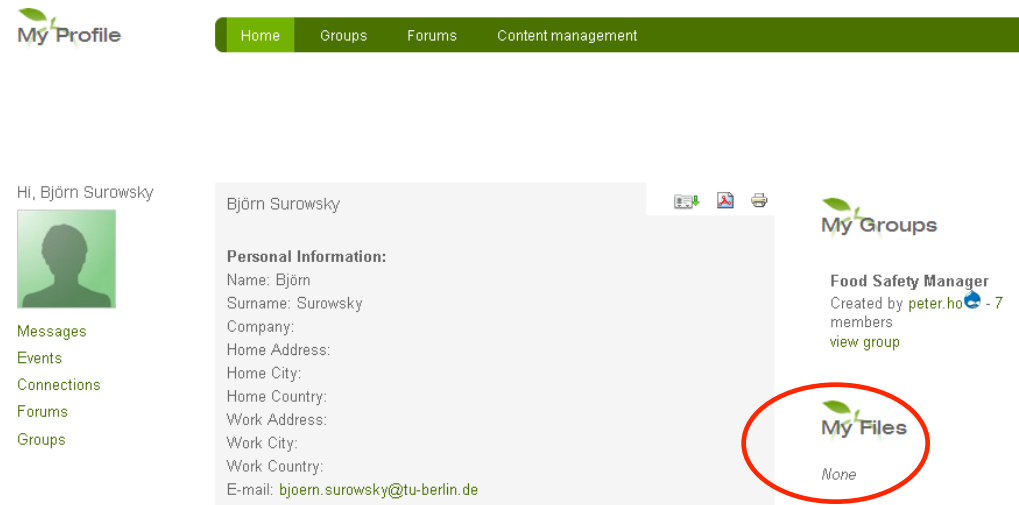
My profile page

- Create a CPD portfolio

- Update an existing CPD portfolio

- Possibility to upload documents (proofs, certificates) and to collect them in the "my files" area

Networking

This section will contain information concerning the groups and it will

be possible to

- create a group post

- invite a friend

- list all members

- get information about the group manager

- see who's online

Training Courses

HACCP

Das eintägige Seminar vermittelt in kompakter Form umfangreiche Kenntnisse zur HACCP-Analyse auf Basis des Codex Alimentarius. Sie erfahren, wie Sie ein schlankes und effizientes HACCP-System aufbauen. Sie trainieren die Erstellung einer HACCP-Studie und das Definieren von CCPs. Durch die Anwendung des erworbenen Wissens verbessern Sie die Lebensmittelsicherheit in Ihrem Betrieb, wehren gesundheitliche Gefahren ab und erfüllen die verschärften Verpflichtungen des Gesetzgebers.

When January 1st, 2013 12:00 AM

Location Germany

Event Fee(s) zzgl. MwSt. € 490.00

▾ Details

Learning outcomes	
Course provider	TQM Training & Consulting GmbH
Link of provider	www.tqm.com
Name of contact person	
Email of contact person	
Language	German
Prerequisites	keine
Online	No
Duration	1 day
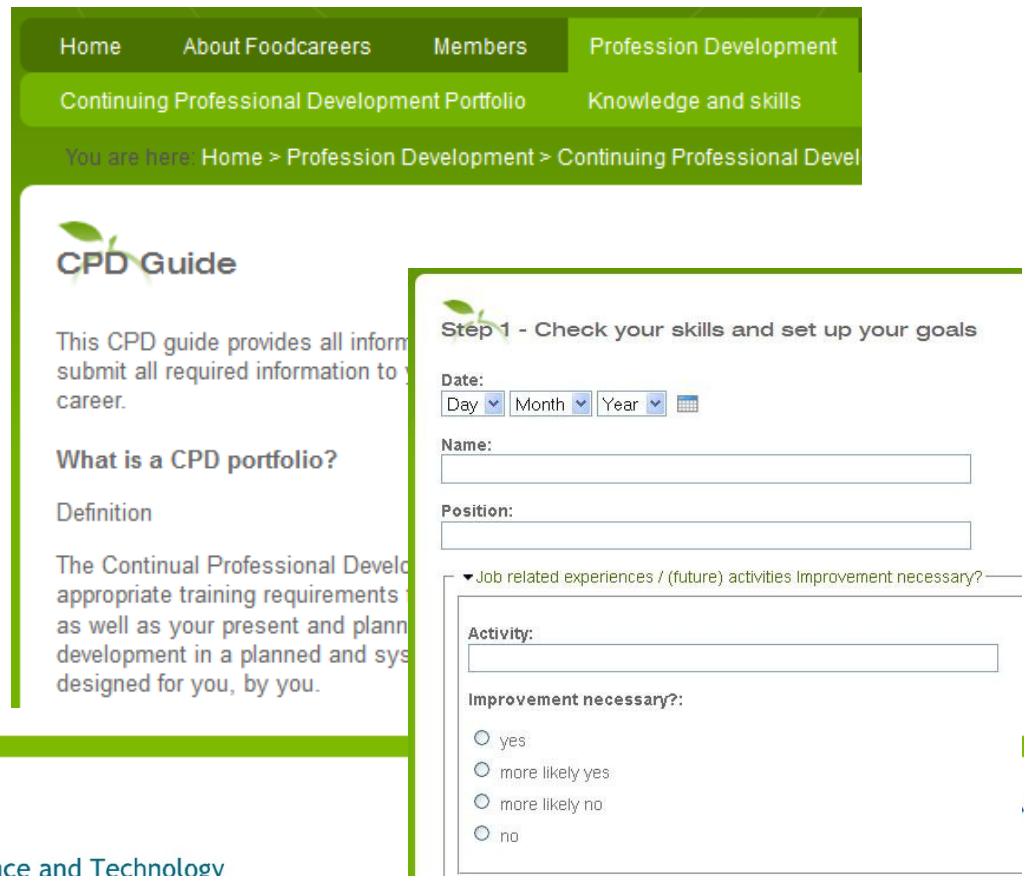
Training Courses

Fundamental Skills	
Personal Management Skills	Demonstrating Positive Attitudes & Behaviours, Being Responsible
Team working and Interpersonal Skills	Working with Others
Business Skills	
Pedagogical skills	Learning & Assessment
Skills for food quality and food safety	Food safety management, food hygiene and food safety control
Skills for Research and development (R&D)	
Skills for Food Production and manufacturing	Health, Safety and the Environment, Cleaning and Preparation, Control Operations
Skills for food retail, food service and the supply chain	
Skills for Logistics	
Skills for food processing sectors	
Certificate	No
Certifying body	
Link of certifying body	

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CPD online implementation

Two main parts:

- **CPD guide** which helps to create a CPD portfolio; visible for all visitors

- **CPD online portfolio**; accessible for registered members

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CPD online implementation

CPD guide

The CPD guide

- defines, what a CPD portfolio is
- describes the principles, aims and benefits of a CPD portfolio
- explains the different steps needed to create a CPD portfolio including detailed examples

Step 1 | **Step 2** | **Step 3** | **Step 4** | **Step 5**

Check your skills and set your goals

First you need to do some analysis — write down your job related activities and the experiences you gained during your whole professional life. Take into consideration already finished training courses (privately organized or company based), literature, daily challenges and other gained experiences.

Then think about the goals to be achieved. Do you want to undertake the CPD for advancement, or to keep yourself up to date? Consider the needs of your employer, or prospective employer, and identify any known developments with which you may need to be familiar.

Once you have identified and set your goals, consider the relative priorities for each one, since some may be very long term and it could be too soon to take specific action on these (see figure 1). Nevertheless they need to be kept in mind, because your short or medium term goals may be linked to their ultimate achievement.
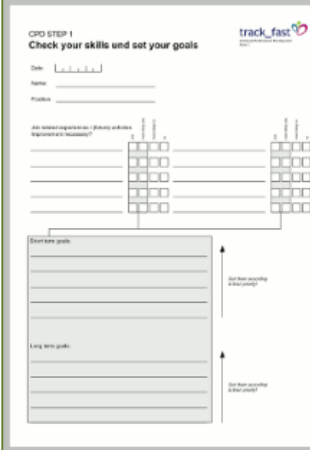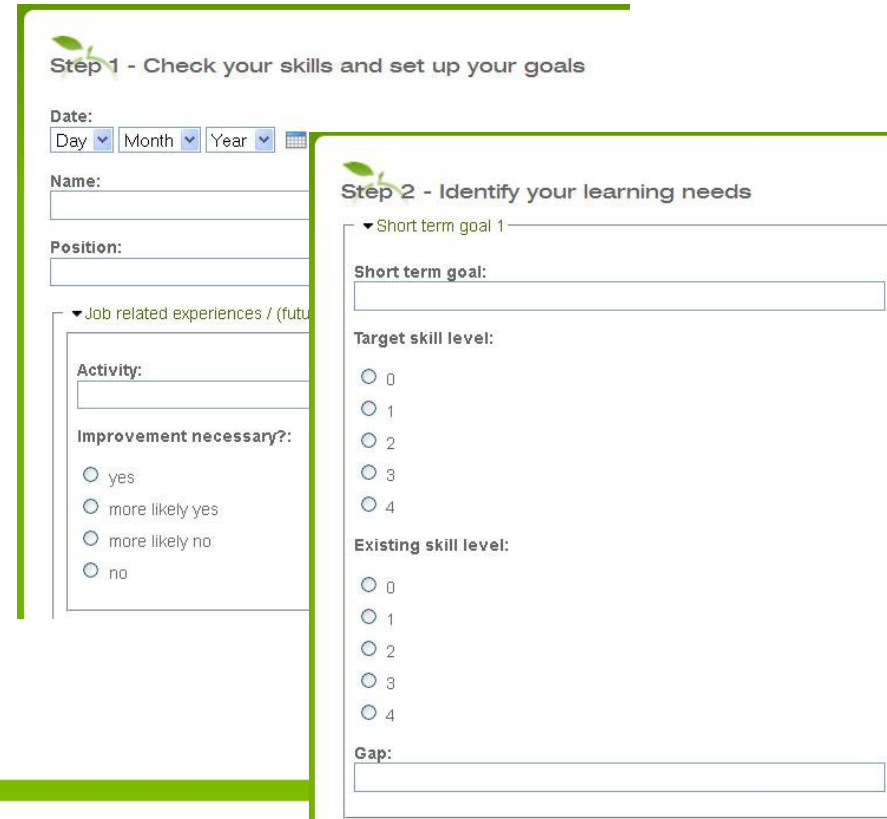
Fig. 1 Checking skills and setting goals.

People change over time, and it is therefore to be expected that your goals may change also, especially the longer term goals. Therefore longer term goals may be less specific than those identified for short term action.

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CPD online implementation

Creating a CPD portfolio (1)

- Interactive online forms which allow the creation of a CPD portfolio

- will be linked to a database which contains skills, training courses etc. for the selected job

- possibility to submit proofs, certificates, etc. (→ my files)

- final result after submitting the forms is a learning plan

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CPD online implementation

Creating a CPD portfolio (2)

- The learning plan finally includes the following information:

  - Desired job/position
  - Skills which need to be improved
  - titles of the courses which have been selected
  - Dates/periods of the courses
  - Course providers

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CPD online implementation

Creating a CPD portfolio (3)

- all CPD portfolio information (learning plan), will be stored at the „my profile" page

- Possiblity to update an existing portfolio

- An „assessment comittee" (tba) will have the possibility to view and to assess the data (certification of competences)

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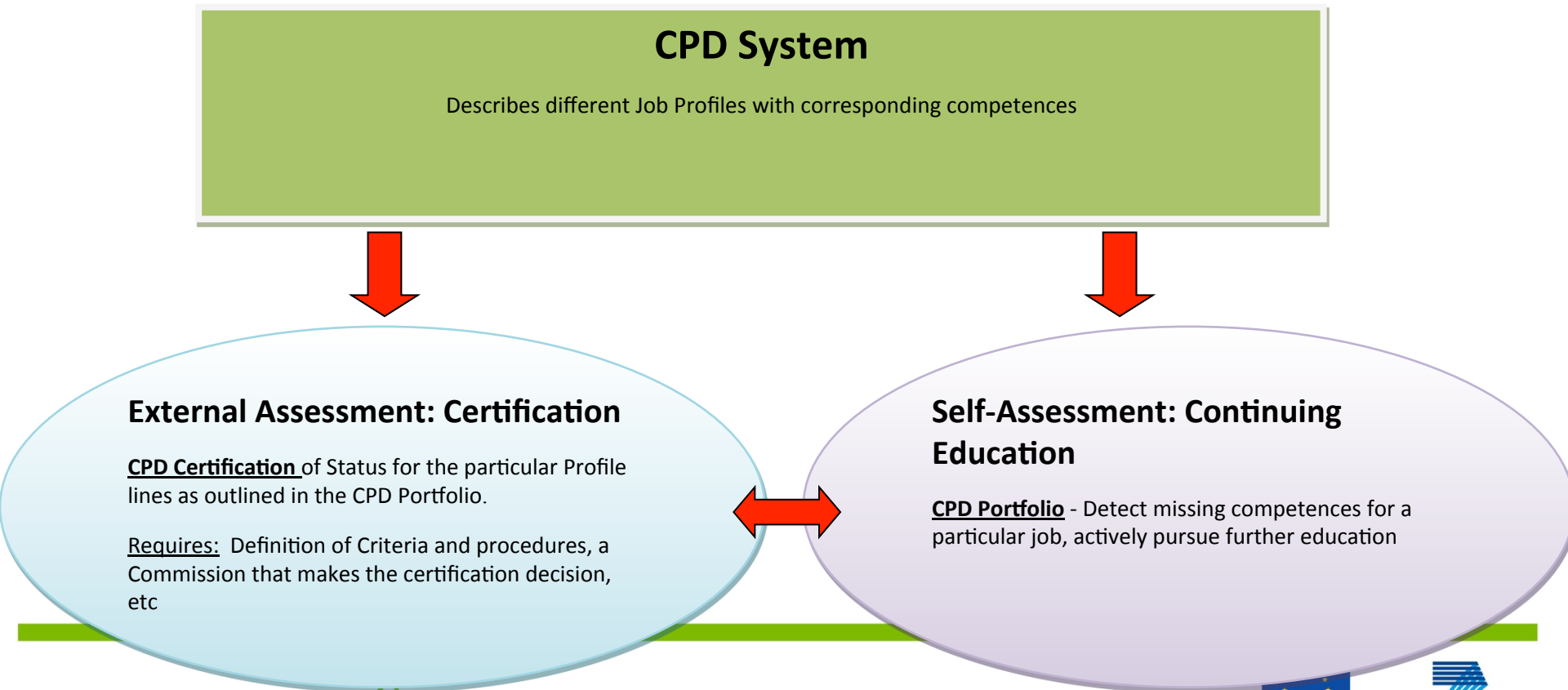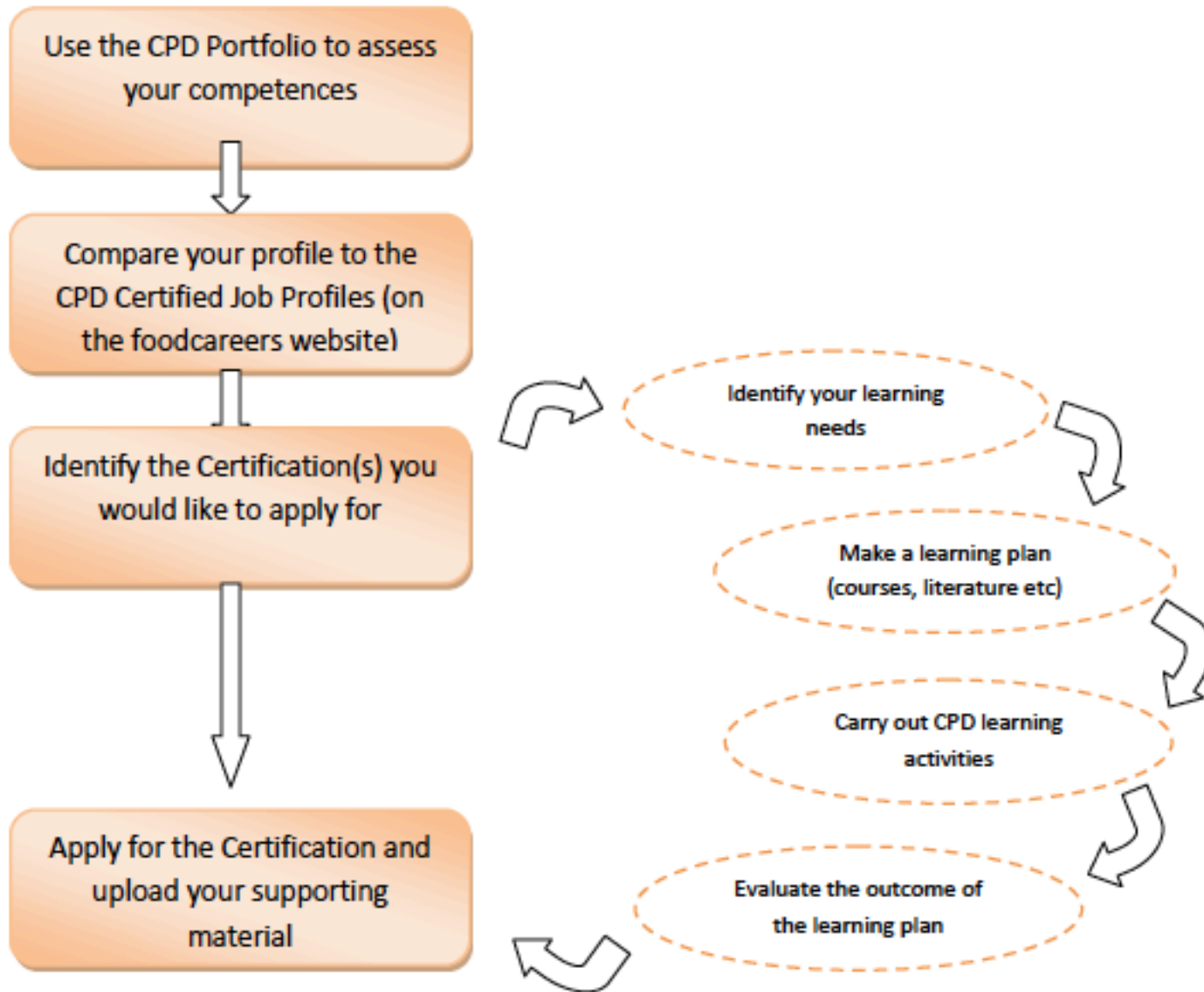
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- Development of a certification scheme for Continual Professional Development programmes

"As a food professional, you may want more than just creating a CPD portfolio which can help you in your next job. <u>You want a certificate which proves that you have the required skills and competences for a particular job anywhere in Europe</u>. One of our aims is to propose and develop a **European certification scheme** for food careers. The assessment of your CPD portfolio will form part of the process for certification."   (https://www.foodcareers.eu/cpd-certification)

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- Development of a certification scheme for Continual Professional Development programmes

CPD System

Describes different Job Profiles with corresponding competences

External Assessment: Certification

CPD Certification of Status for the particular Profile lines as outlined in the CPD Portfolio.

Requires: Definition of Criteria and procedures, a Commission that makes the certification decision, etc

Self-Assessment: Continuing Education

CPD Portfolio - Detect missing competences for a particular job, actively pursue further education

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Sustainability after project ending

>>> Motivation of young people to enter and pursue of a career in food science and technology in Europe

FOODGALAXY

Search...

Have an account? ☑ S

The Taste of Life

I eat therefore I am

Once upon a time...

To eat or not to eat

Mission Possible

I am the king of the kitchen

Brave new food

A small product for the consumer - a giant process for the producer

MY FOOD
CAREER

Food production and processing

Nutrition

Experiments with food

High pressure

Health ingredients

Studying food science ecology

Food science, engineering and technology

Waste management

Highlights

Food & Religion

Wed, 21 Mar 2012

Lifestyle and food habits have been encoded and regulated by belief and religion for centuries. This choices might have a biological base, but

MAIN AIM:

Show prospective students

Food Science is a **real science with real challenges**

Careers in Food Science and Technology

track_fast
Europe's Food Science and Technology
on a Fast Track

EUROPEAN
COMMISSION

SEVENTH FRAMEWORK
PROGRAMME

www.foodgalaxy.eu

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- **The taste of life** (Sensorial, Colours)

- **To eat or not to eat** (Allergies, E-numbers, GMOs, Toxins)

- **Once upon a time** (History of Food Processing)

- **I eat therefore I am** (Nutrition)

- **I am the king of the kitchen!** (Gastronomy, House Experiments)

- **Brave new food** (Emerging Technologies, Innovative Food)

- **A small product for the consumer – a giant process for the producer**

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Food Science is a **fun – targeting a "younger" audience**

A career in Food Science is a **challenging and rewarding**

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Sustainability after project ending

Website

www.trackfast.eu/
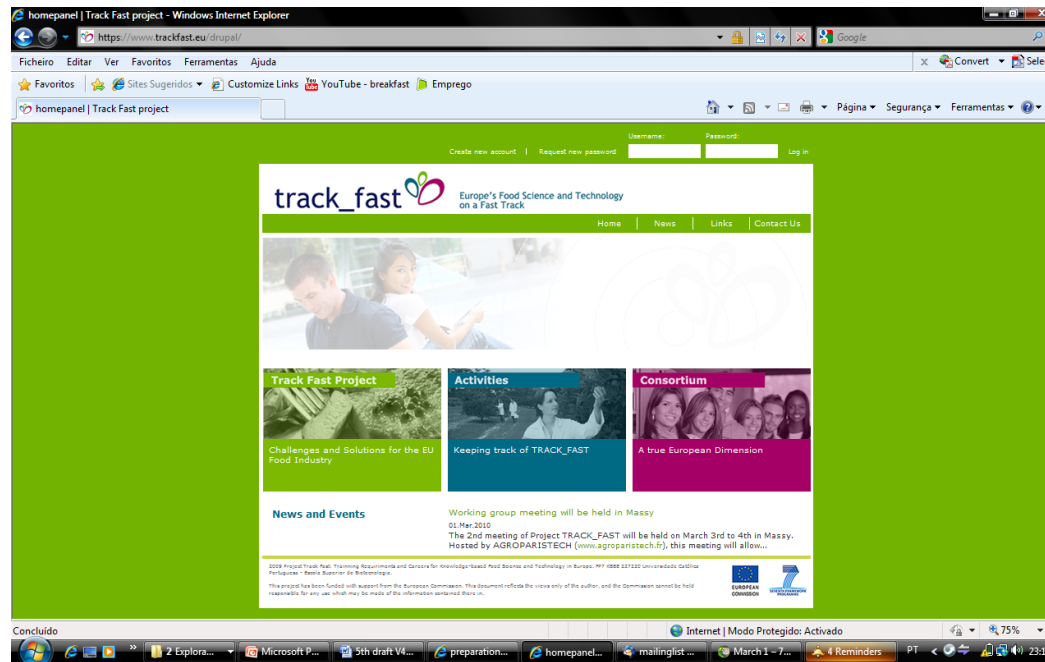
Communication

→**emails:**

trackfast@porto.ucp.pt

clsilva@porto.ucp.pt

→**Phone:**
+ 351 22 5580058