

DEHEMS 2° International Conference

Employability of Graduates & Higher Education Management Systems

The ISEKI_Food projects and network: strategies and activities to implement skills and abilities of the future generation of graduates in food studies

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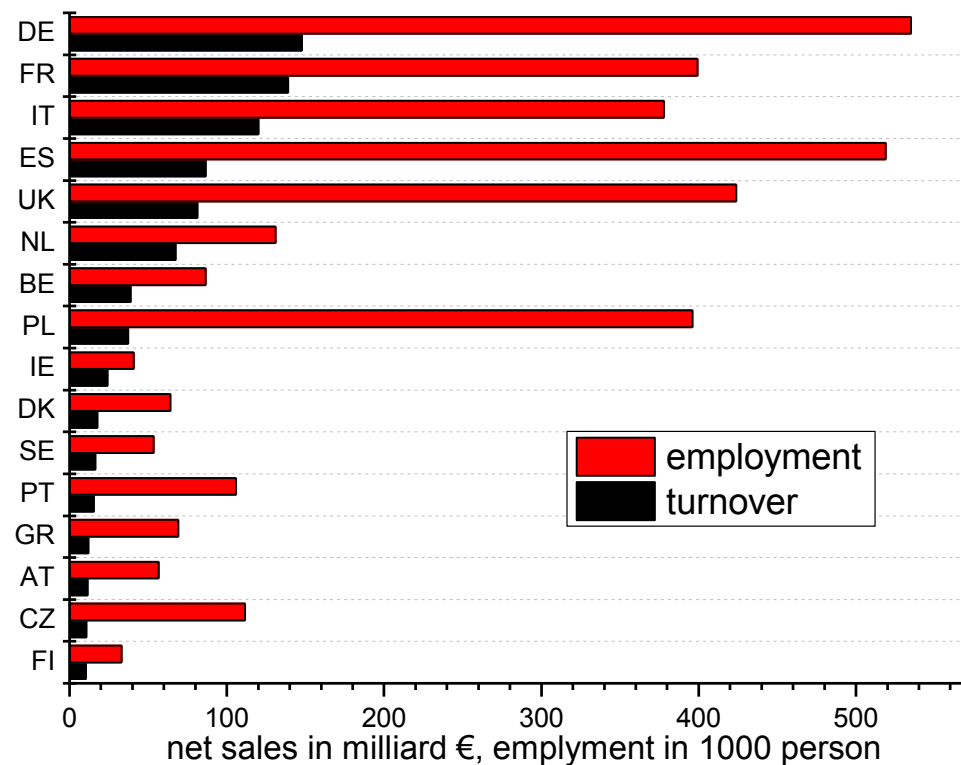
Food Industry in EU: employment and turnover of food industry

		Micro	Small 10 to 19	Small 20 to 49	Medium sized	SMEs	Large
Turnover	%	6.7	5.0	9.6	26.8	48.2	51.8
Value added	%	9.2	6.0	9.1	23.5	47.7	52.3
Number of employees	%	16.3	9.5	11.7	25.3	62.8	37.2
Number of companies	%	79.4	10.5	5.6	3.6	99.1	0.9

Key figures by company size (%)

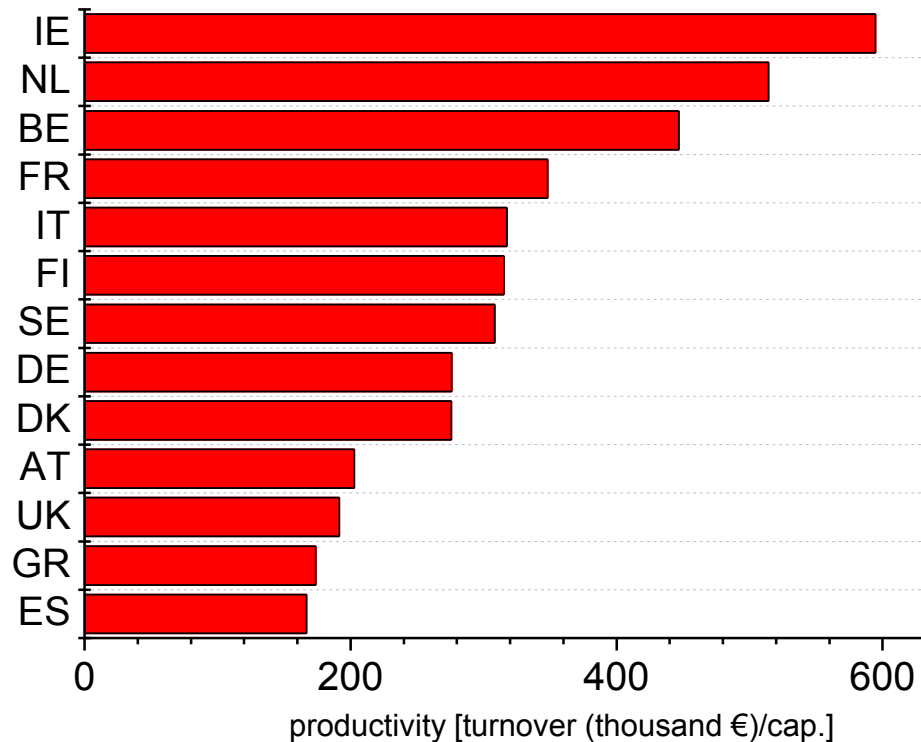
Source: <http://smes.ciaa.eu/> visit 31 July 2012

Employment and turnover of food industry by country



Source: CIAA (2011): *Data & Trends of the European Food and Drink Industry 2010*, Brussels, p.26

Productivity of food industry in EU countries



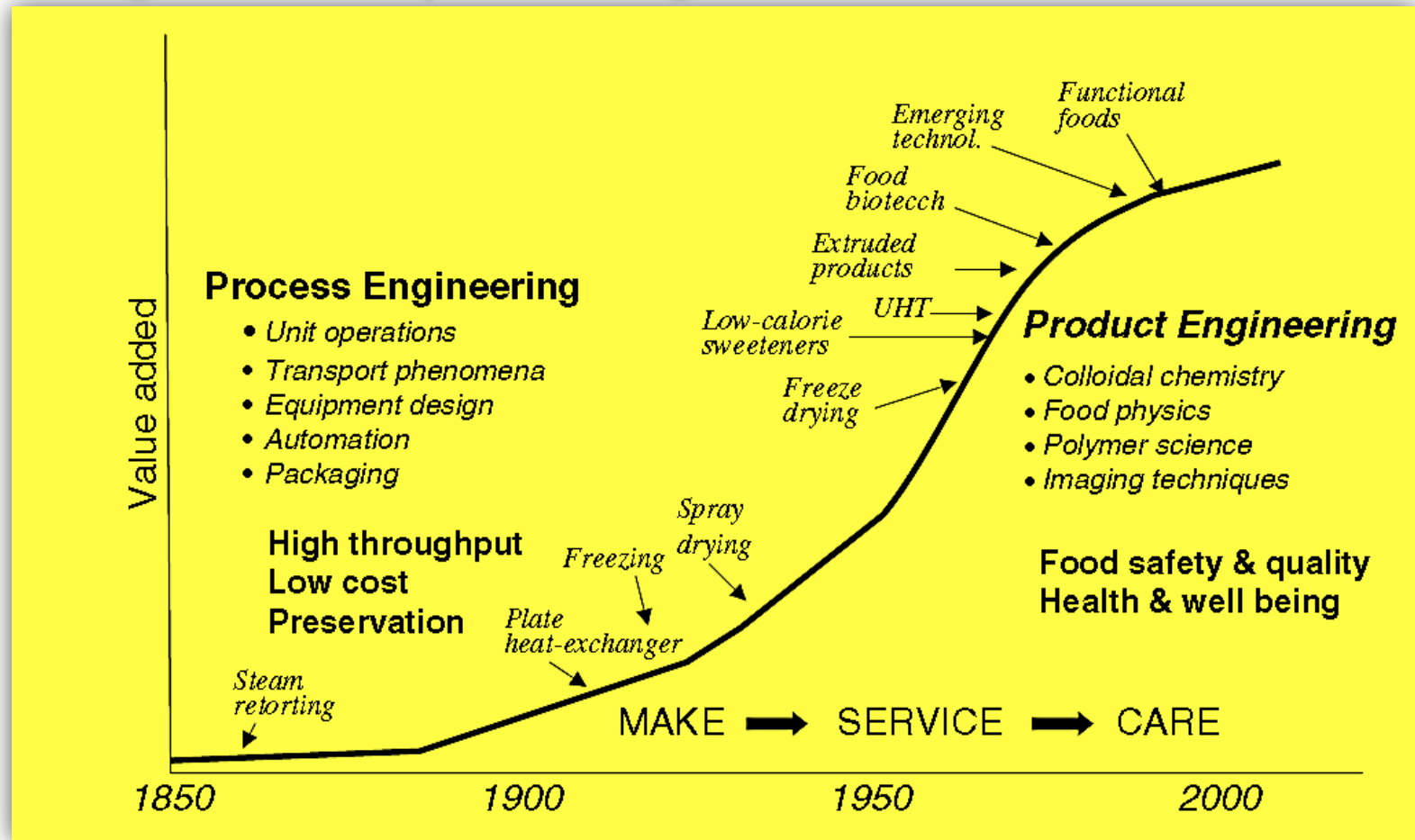
Source: CIAA (2011): *Data & Trends of the European Food and Drink Industry 2010*, Brussels, p.26

Food industry

The food industry has the largest annual sales turnover of any manufacturing activity worldwide and many analysts consider it now as a mature industry.



Evolution of the food industry and shift of target in food processing



Aguilera J. (2006)

Education: Food related-study programmes in EU

Bachelor degree: > 210

Leading countries (n.): DE, ES, IT, P

Master degree: > 200

Leading countries (n.): IT, PT, UK, DK

PhD: > 70



Education: Food related-study programmes in EU

Bachelor programmes:

FST, FS, FT, FE, Biotech, Viticulture & Oenology, Processes of Animal products, Nutrition & FS, Process Eng – FT, Engineer Agronomist,...

Food Innovation Management, Food Innovation, Food Service, Gastronomic Sciences, Food & Business....

Master programmes:

FS&T, FS&Eng, Industrial Biotech, Innovative Enology, Food microbiology, Food chemistry, Life science Technology Agrofoodchain

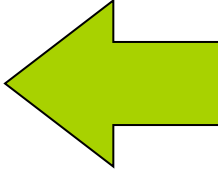
Food enterprise development, Food Business,...

(Track_fast & ISEKI_Food collection data, 2012)

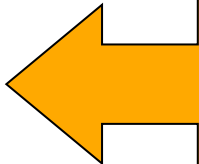


Comments

- ❖ **Large variety of Food related courses**
- ❖ Diverse origin of the Food related courses in the various countries
- ❖ Bachelor, Master, Phd = three level (Bologna) system
- ❖ - Generic vs sector/specialisation specific/oriented (bio-, wine-, animal)



**different skills and
knowledge of
graduates =
different initial
working positions**



**different
teaching
approach and
learning
outcomes**

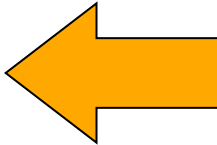
Comments

- Few new “food” related curricula (especially at Master level): gastronomy & health,

- Few EU master courses

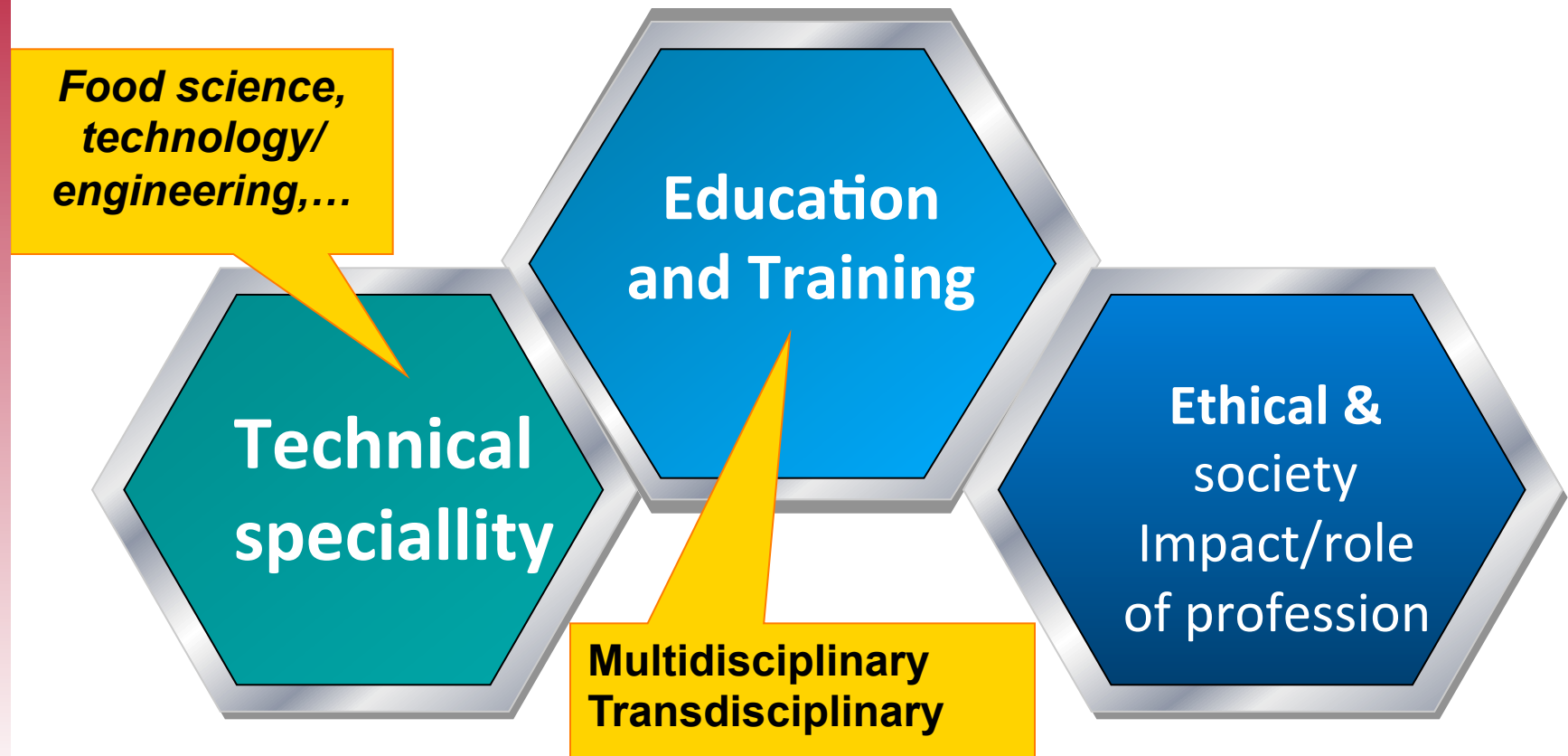


**New curricula for
new jobs**



**Constraints to joint
degrees between
HE from different
countries**

Key characteristics of graduates in Food Studies



Main training and educational goals of HE institutions

While facing issues like.....

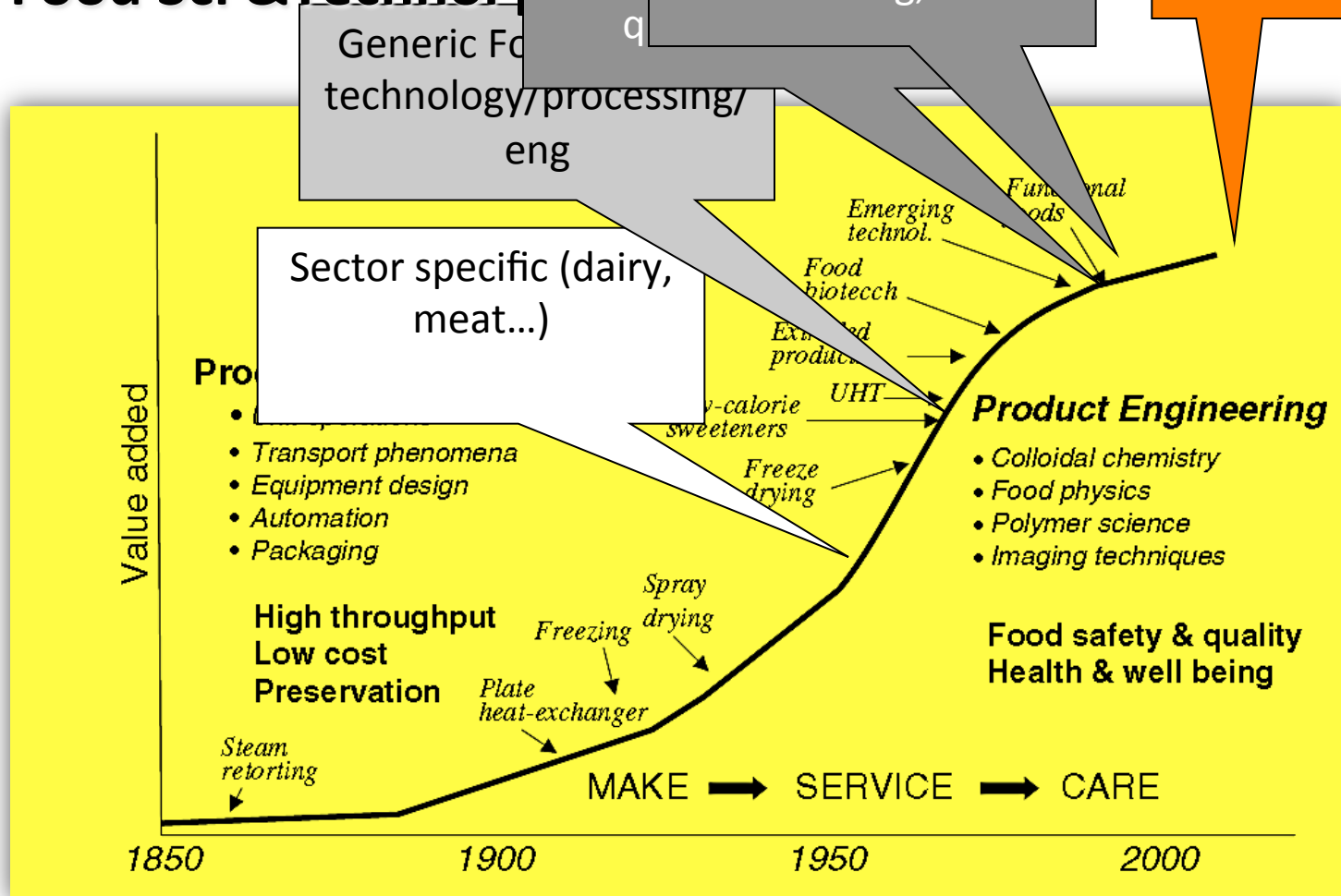
- *New generation of students*
- *Internet-social network*
 - *Web 2.0 generation*
- *Lower financial support to HE*
- *Resistance to changes*
- *...lower importance of Food Science and Technology studies/curricula*
- *Competition from other scientific fields*



- Quality standards (certification, label)
- Internationalisation
- New skills for new jobs
- Lifelong learning and continual professional development

Evolution of the food for health

Food Sci & Technology



Aguilera J. (2006)

New skills for new jobs?

Job offers (taken from various websites...)

Senior Product Technologist
 New Chef de Vente Régional
 Development Manager
 Int. Senior Product Manager
 Industrial by –products sales Head
 Process improvement Manager

Sales Development Manager
 Manufacturing Management

R&D / Lab Food Technologist
 Quality assurance officer

....



Food service

**Restaurants
 (gastronomy/molecular)**

....

New skills for new jobs?

New technical skills

Basic:

ICT

Quality & Sustainability

Strategic:

Agri-food economy and economic efficiency

Food product design

Research & development

Food safety

Marketing distribution and communication

Production efficiency

....

New skills for new jobs?

Soft skills and personal behaviour!

Communication

Team-working ability

Problems solving

Foreign languages

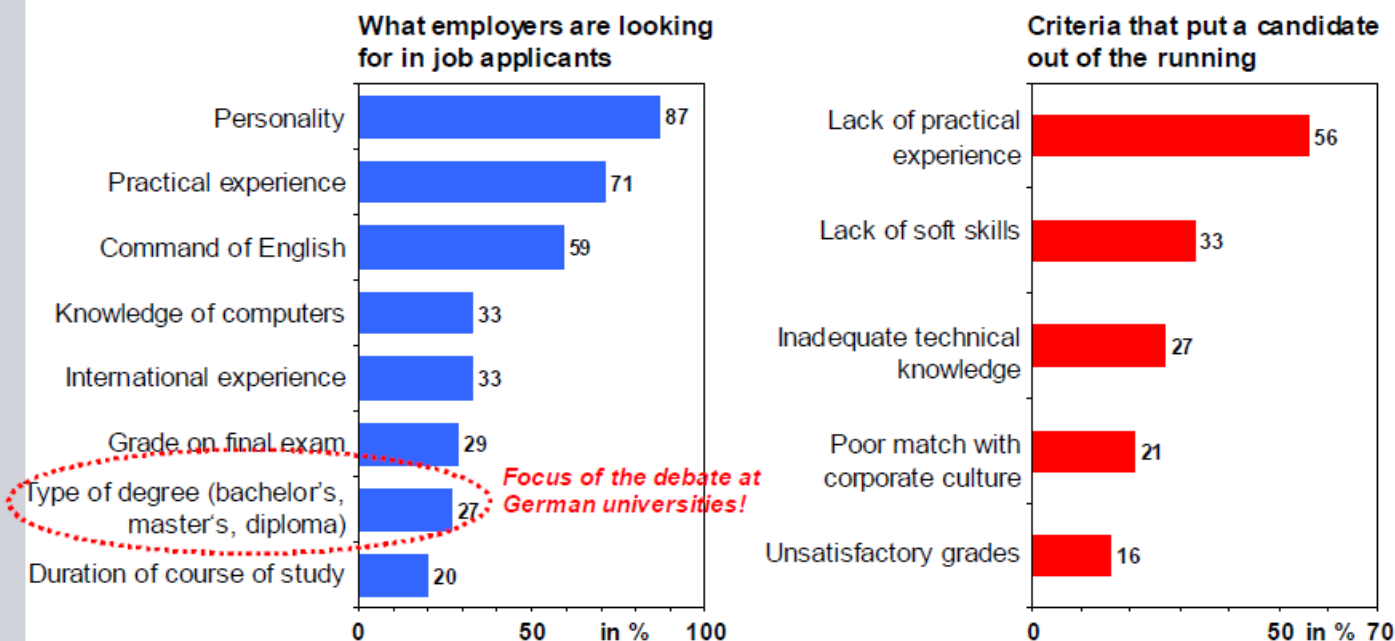
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New skills for new jobs?

Germany: What skills and qualifications are employers looking for?

SIEMENS



Current “hot” issues of the food chain

- Increasing population
- Globalisation (raw materials, market and production)
- Financial and economic crisis (EU, in particular)
- Food security
- Food safety
- Sustainable development and ecological integrity

while keeping and accomplishing

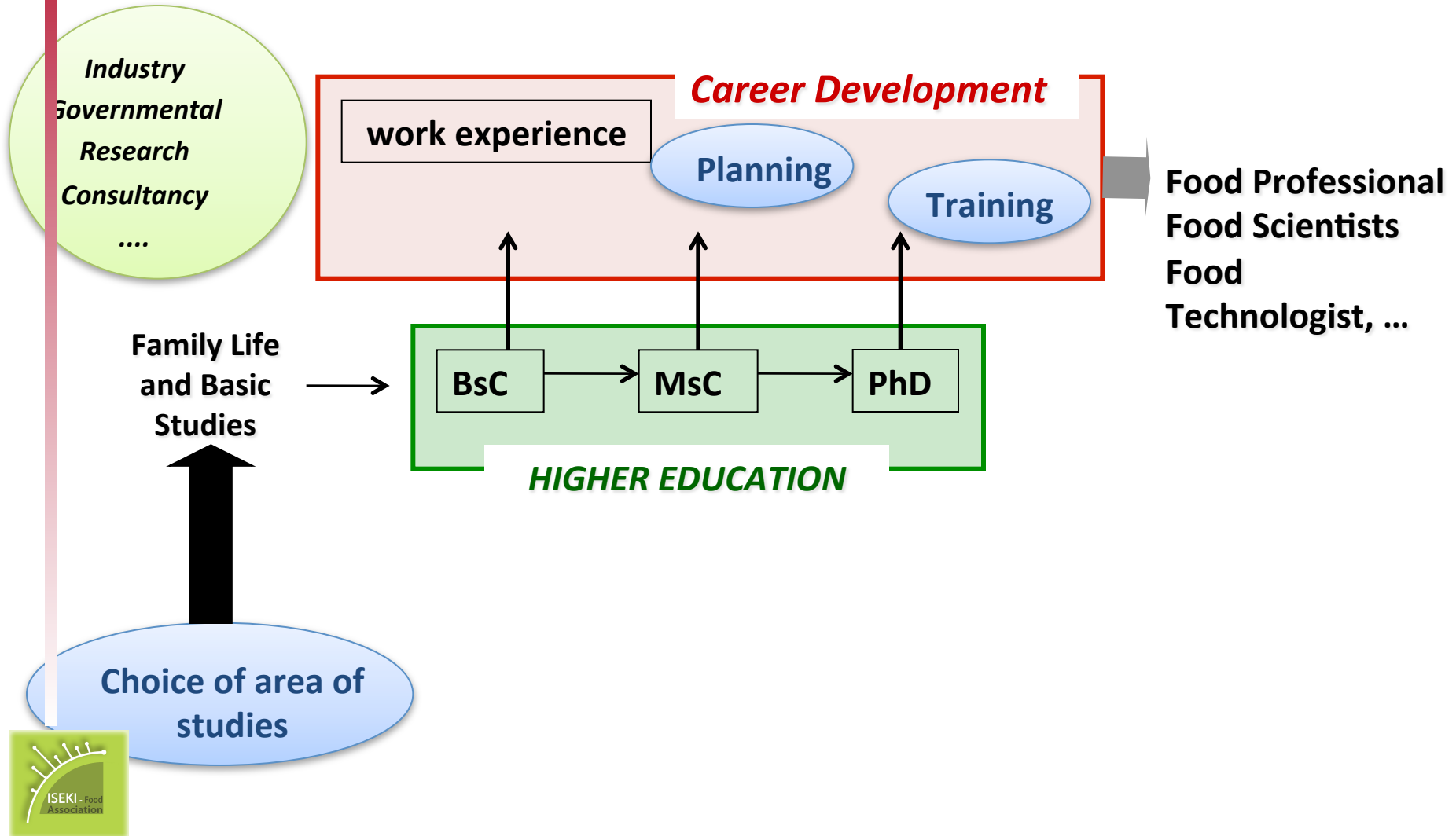


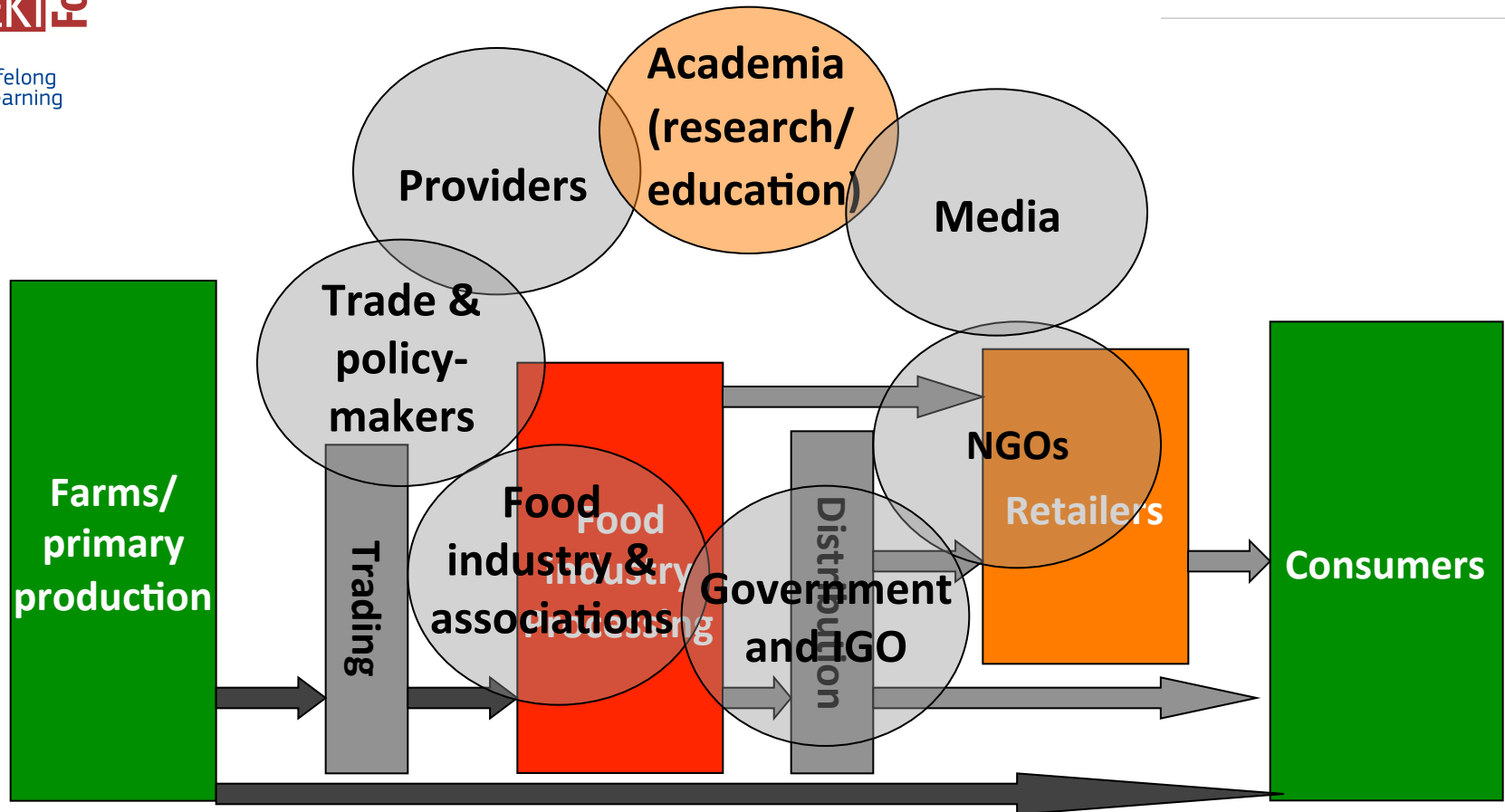
Quality and safety
Modernisation
Innovation
Sustainability

Main training and educational needs of professionals and scientists in the Food sector

- Hard-technical skills (basic-medium-advanced knowledge)
 - Change of the importance of the main areas: from Quality and Safety...to health and wellness ...to nutrigenomics and metabolomics.
- Technology transfer
- ...personal (or soft) skills!

Food professional career path





Food sector, chain and stakeholders

Education: goals and responsibility

To improve and to allow the development of the society by

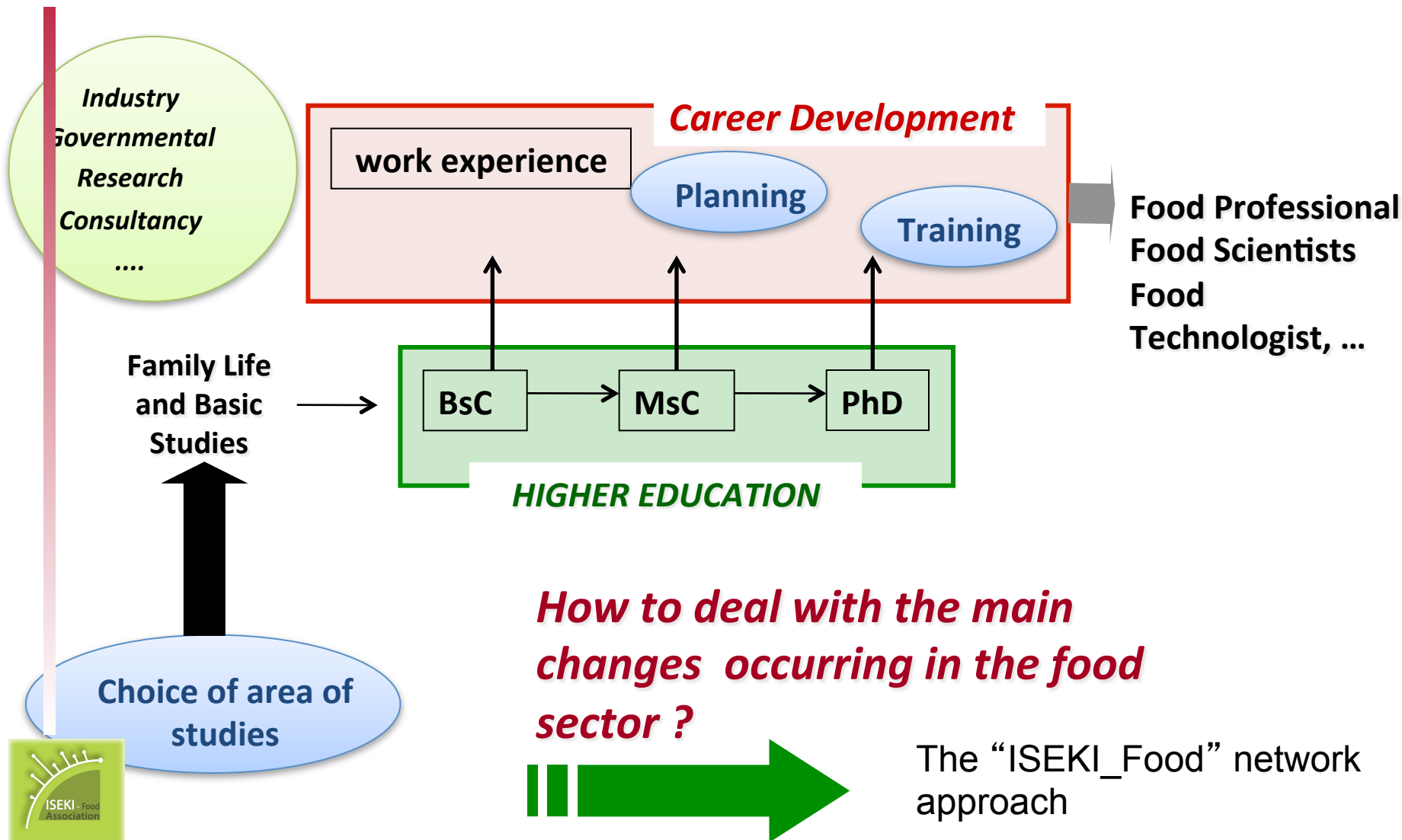
- transfer of knowledge
- development of skills and expertise of students and trainees, meeting the expectations of
 - consumers
 - job market

Education: engagement

Teaching and learning are human activities involving several actors with different backgrounds, different expectations and responsibility.

This is of pivotal importance in the context of the Higher Education in Food Studies, with stakeholders that are, researchers, academic staff, professionals, industry, societal representatives and students.

Food professional career path



Objectives for the development of a network of Universities and stakeholders in the Food area in EU

Academic studies in Food Science and Engineering are strongly multidisciplinary: chemistry, biochemistry, physics, microbiology, process engineering and technology, management, logistics, market studies, informatics...

*That gives a full justification to organize a network of universities dealing with Food Studies, with different specialities, but all working for the same aims: **education and research for the benefit of consumers through food industry.***

.....

*Our role and duty as researchers and teachers is to develop **mutual knowledge, exchange of ideas**, at a European and International level to be able to participate in the development of all countries, locally and everywhere, to give right answers to an international changing market.*

*From “Hystory of the Food network before ISEKI_Food”, E. Dumoulin, 2011,
www.iseki-food.eu/*

The Bologna process

The Bologna process (1998) is the product of a series of meetings aimed to the creation of the European Higher Education Area by making academic degree standards and quality assurance standards more comparable and compatible throughout Europe, in particular under the Lisbon Recognition Convention, in order to:

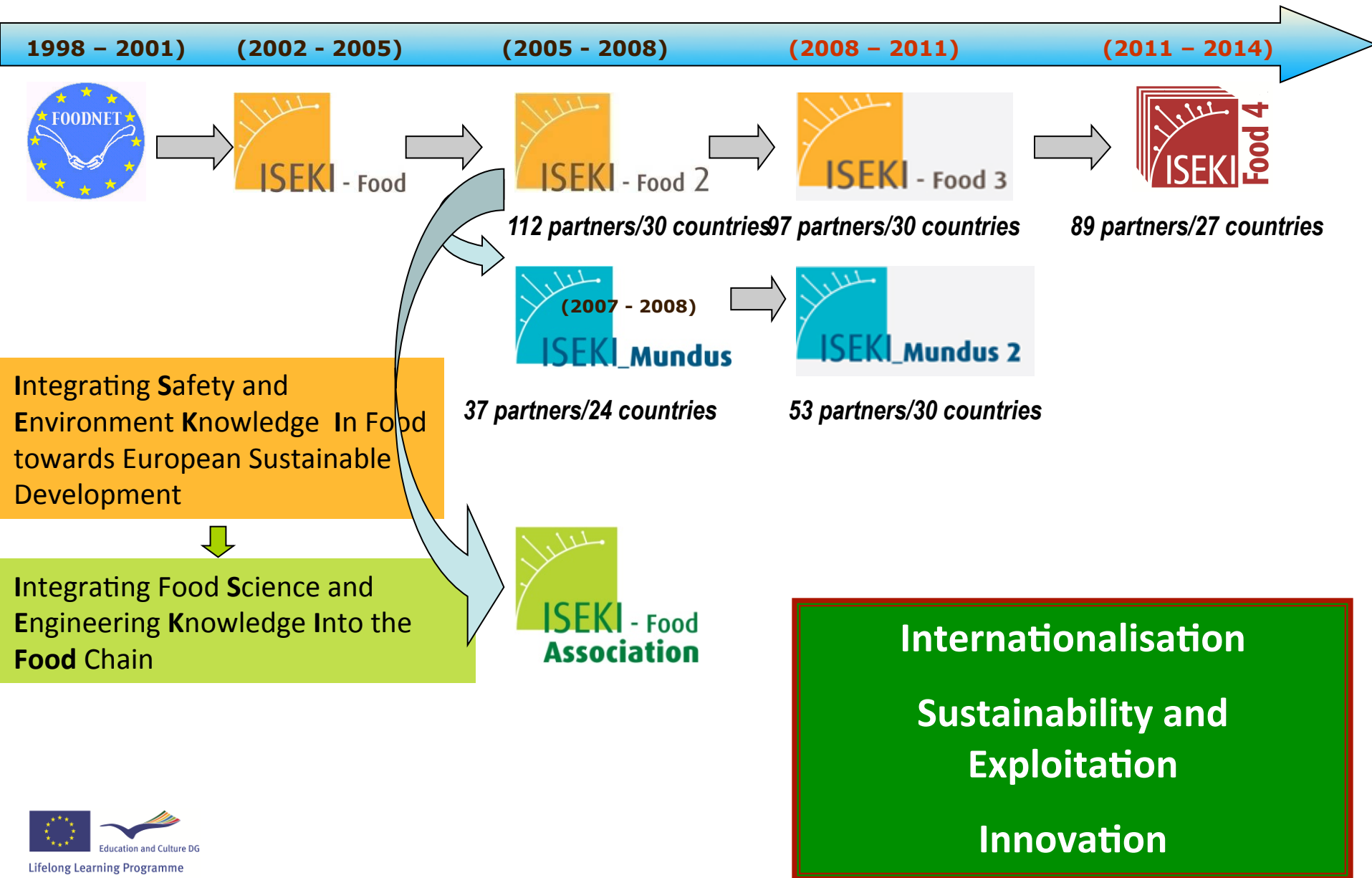
- **Harmonise architecture of study programmes and favour students mobility**
- **Enhance the employability and mobility of citizens**
- **Increase the international competitiveness of European higher education.**

2010: 47 countries, new goals for 2020

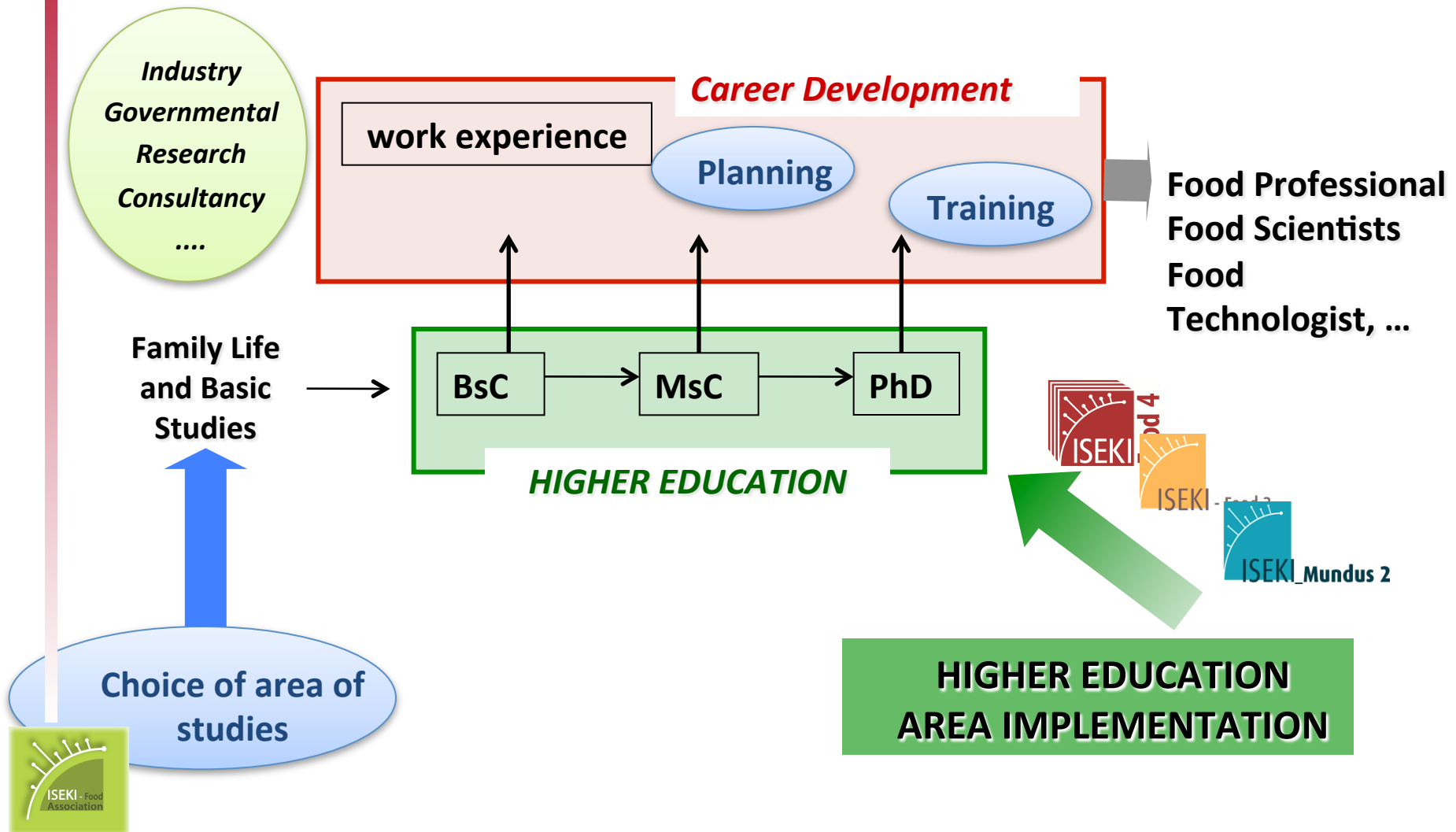
- **Education, Research & innovation**
- **International Openness**

mobility

The history of the ISEKI_Food projects....



Food professional career path



Main objectives and activities of the past ISEKI_Food projects

- Education and Training

- Implementation of the Bologna process

- Tuning curricula in Food Studies and Minimum Requirements

- Innovative teaching and training materials

- Quality assurance of European Food Studies

- Development of interfaces and promote synergies between research in Food Science and Engineering with Education/Teaching and Industry

- Establish communication with the general public and the consumers

- Virtual community of experts in the field of food

Main outcomes of the past ISEKI_Food projects

Education and Training

- **Tuning curricula in Food Studies and Minimum Requirements (reference document for new curricula in FST)**
- **Innovative teaching and training materials**
- **Quality assurance Label of European Food Studies (EQAS)**

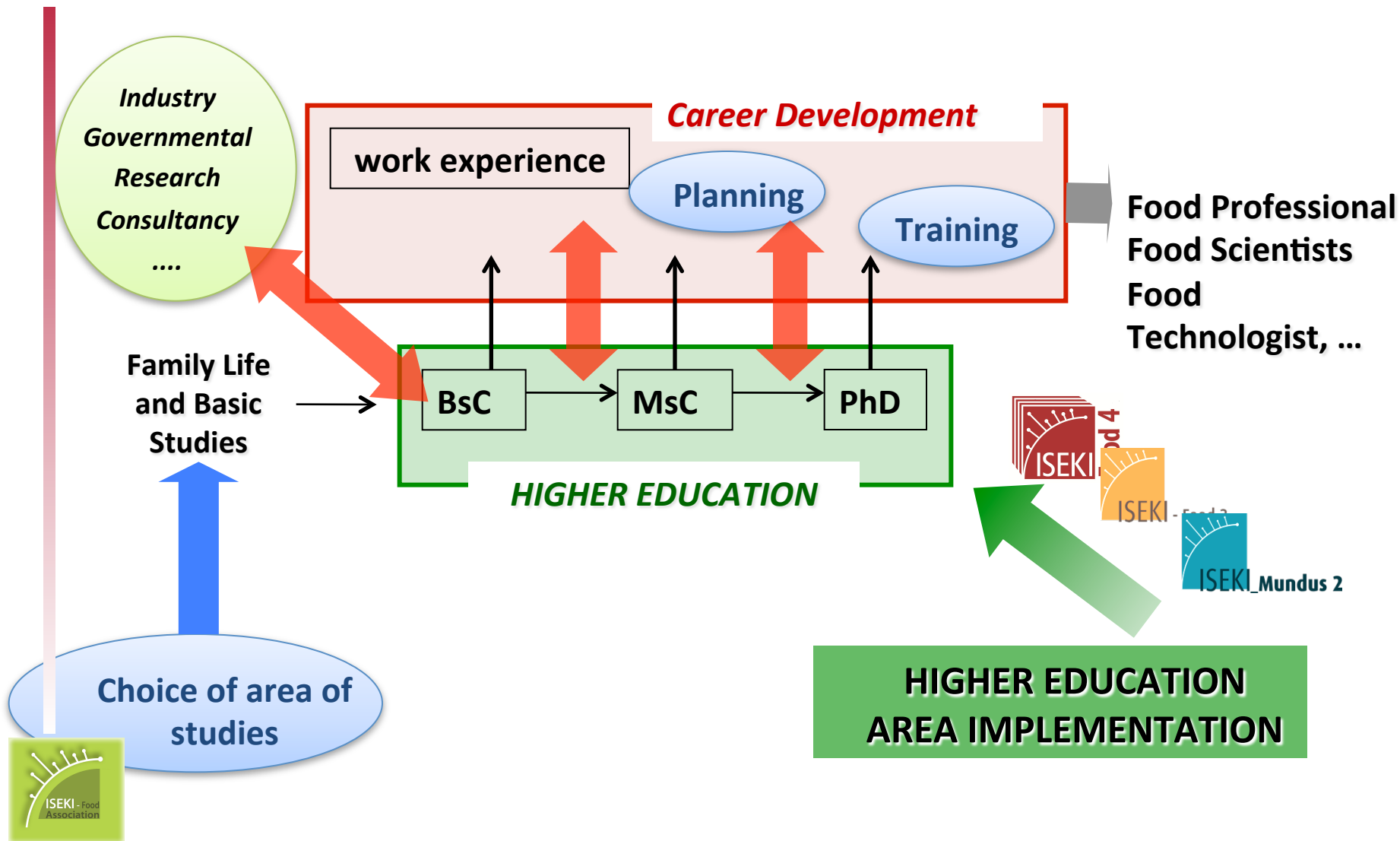
Education-Research-Industry interactions

- e-journal
- ISEKI_Food Conferences
- Innovative teaching and training materials

....


www.iseki-food-eu

Food professional career path



Actions and ongoing projects

ISEKI_Food-4: Towards the innovation of the Food Chain through the modernisation of Food Studies **IFOOD4**

Erasmus Academic Network

51815-LLP1-2011-1-IT-ERAMUS-EW

1 October 2011- 30 September 2014

86 EU partner from 27 eligible countries

3 no EU partners

+ 42 associated partners from all over the world

www.iseki-food4.eu

IFOOD 4 - Main objectives and expected outcomes

- ***Modernising and upgrading the education and training of Food studies***
- ***Implementing the labour market role of the third level of education (PhD programmes, in particular) in promoting the employability and entrepreneurship of the graduated FS&T and Food professional***
- ***Lecturing qualification of university teaching staff***

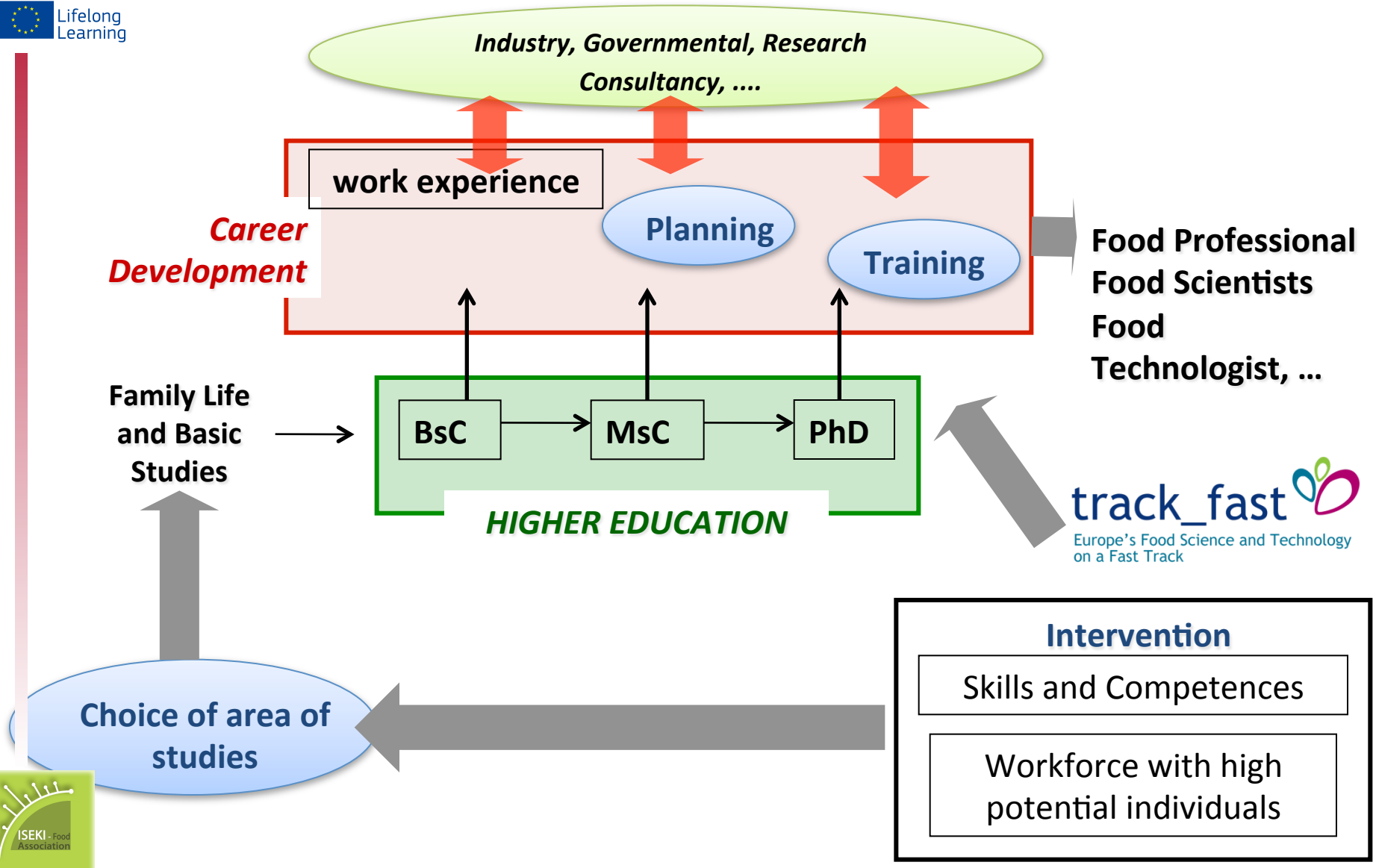


**Toolbox for modernisation and
internationalisation of Food curricula**

Virtual platform for PhD students and courses

Teaching staff framework and pilot summer school

Food professional career path



Actions and ongoing projects

TRACK FAST (www.trackfast.eu)

Training Requirements And Careers for Knowledge-based Food Science and Technology in Europe

FP7 KBBE 227220

September 2009 – February 2013

track_fast 

Europe's Food Science and Technology
on a Fast Track



T_F - Main objectives and expected outcomes

“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 FST leaders”.

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

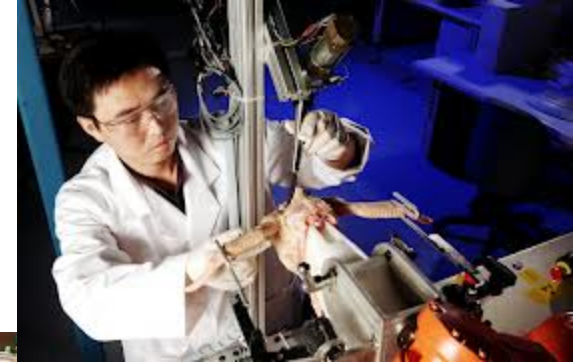
Promotion of FST to
attract students

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

Regulation of FST
professions in Europe

T_F – Activities and expected outcomes

- Identification and definition of personal skills requirements in food job market
 - Survey to stakeholders, brainstorming workshops
- Developments for the regulation of food science and technology professions in Europe



T_F – Activities and expected outcomes

- ✓ Establishment of a framework for Continual Professional training and career development for the FST professional.

www.foodcareers.eu



Better
prepared
PROFESSION
ALS



foodcareers

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

Join us!

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latest news

**Publication of Knowledge and Skills draft
document version 2.0
03.2012**

A new version of the publication on knowledge and
skills requirements for careers in the food industry
is available for download.

[Read more](#)

upcoming events

PAS 220 : 2008 & FSSC 2200

[Read More](#)

Pos-graduated in Enology

[Read More](#)

who's on-line

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

T_F – Activities and expected outcomes

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

www.foodgalaxy.eu



**MORE
PROFESSION
ALS**

To show prospective students

Food Science is a **real science with real challenges**
Careers in Food Science and Technology



Food production and processing

Nutrition

Experiments with food

Health Ingredients

High pressure

Studying food science

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 their strength resides in their

[Read more](#)

Sustainability of the ISEKI_Food project: ISEKI_Food Association

www.iseki-food.net



Secretariat:

c/o Department of Food Science and Technology

Muthgasse 18, A-1190 Vienna, Austria

tel: +43-1-47654-6294, fax: +43-1-47654-6289

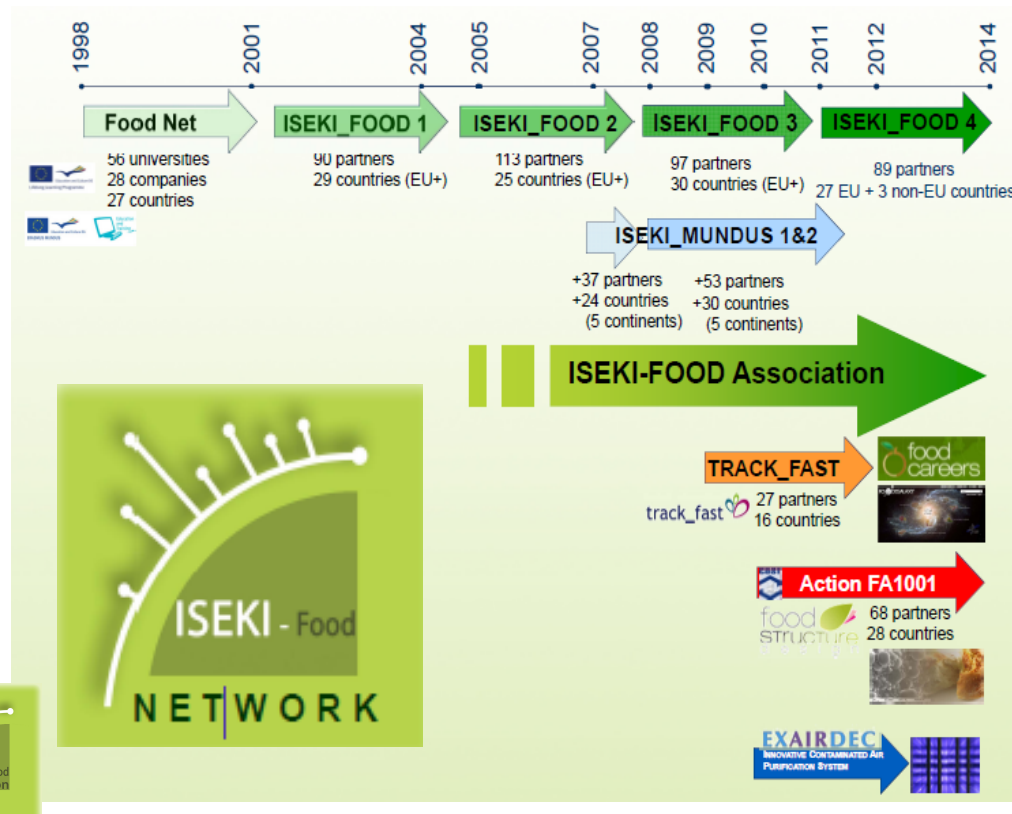
email: office@iseki-food.net

President: Richard Marshall

Vice-President: Paola Pittia

1st-President: Cristina L. Silva

IFA is an **independent European non-profit organisation**, founded in 2005 as an outcome of 10 years of Thematic Network activities **for all stakeholders in the food supply chain** with regard to **education, research, legislation and communication**.



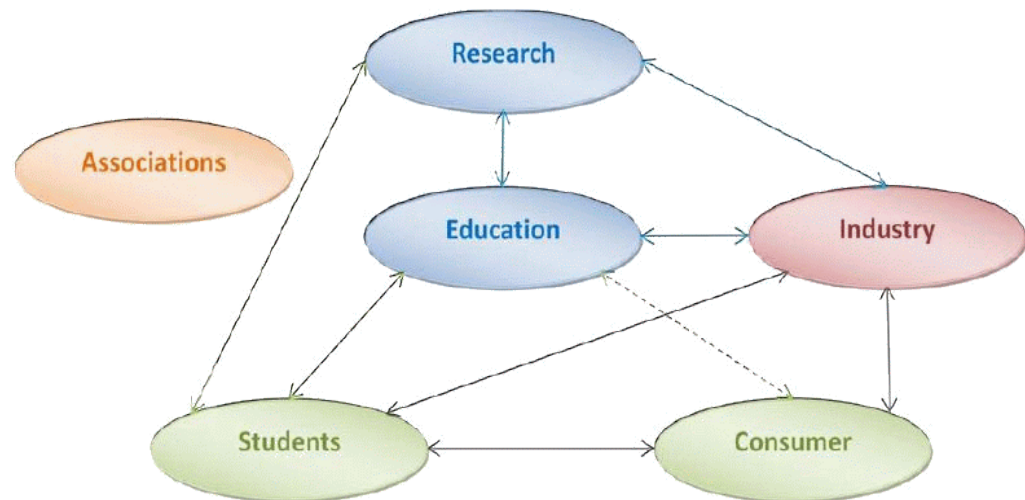
226 individual and 36 company members from 61 countries around the world

1 sub-section: Indonesia

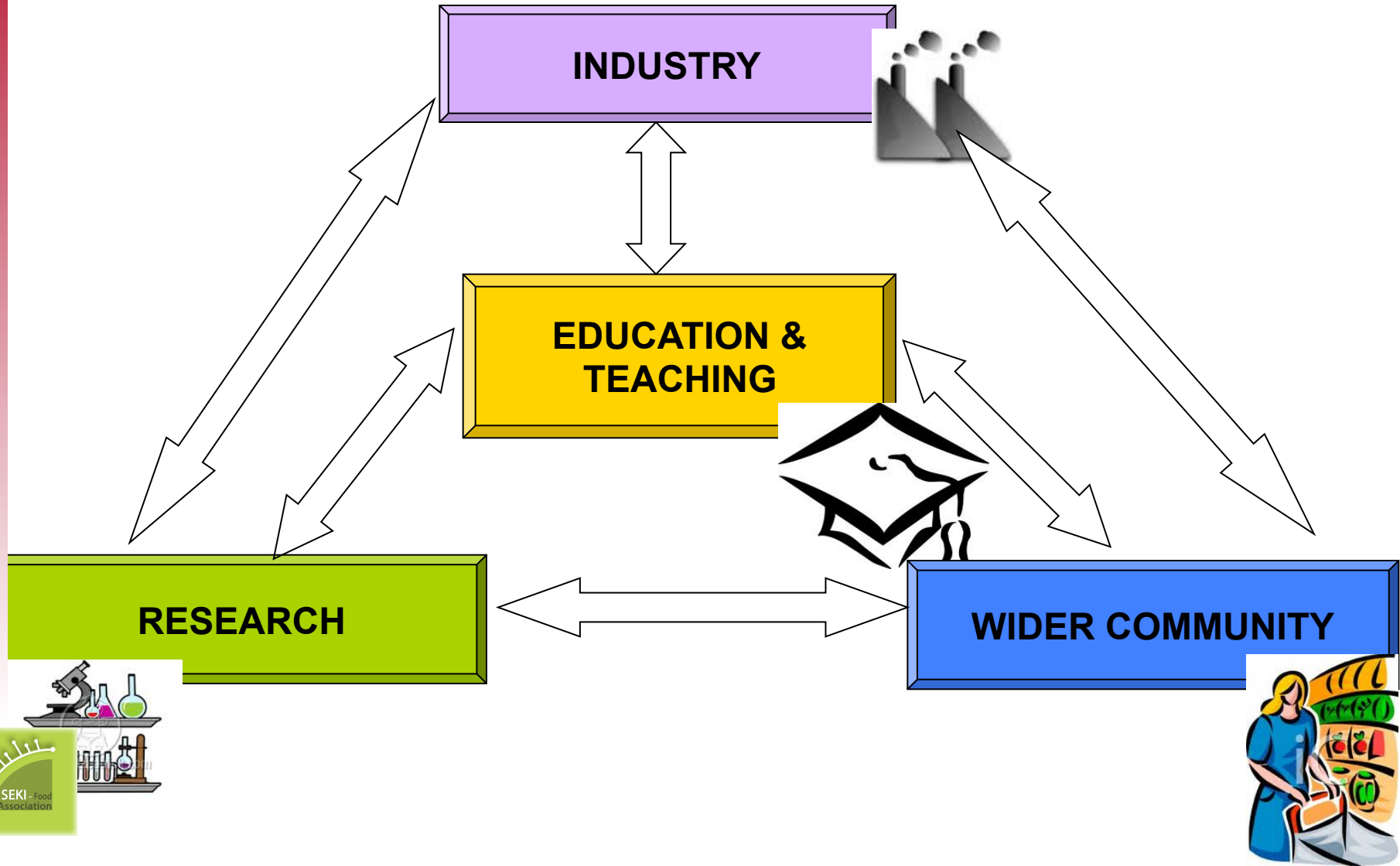
is a platform for:



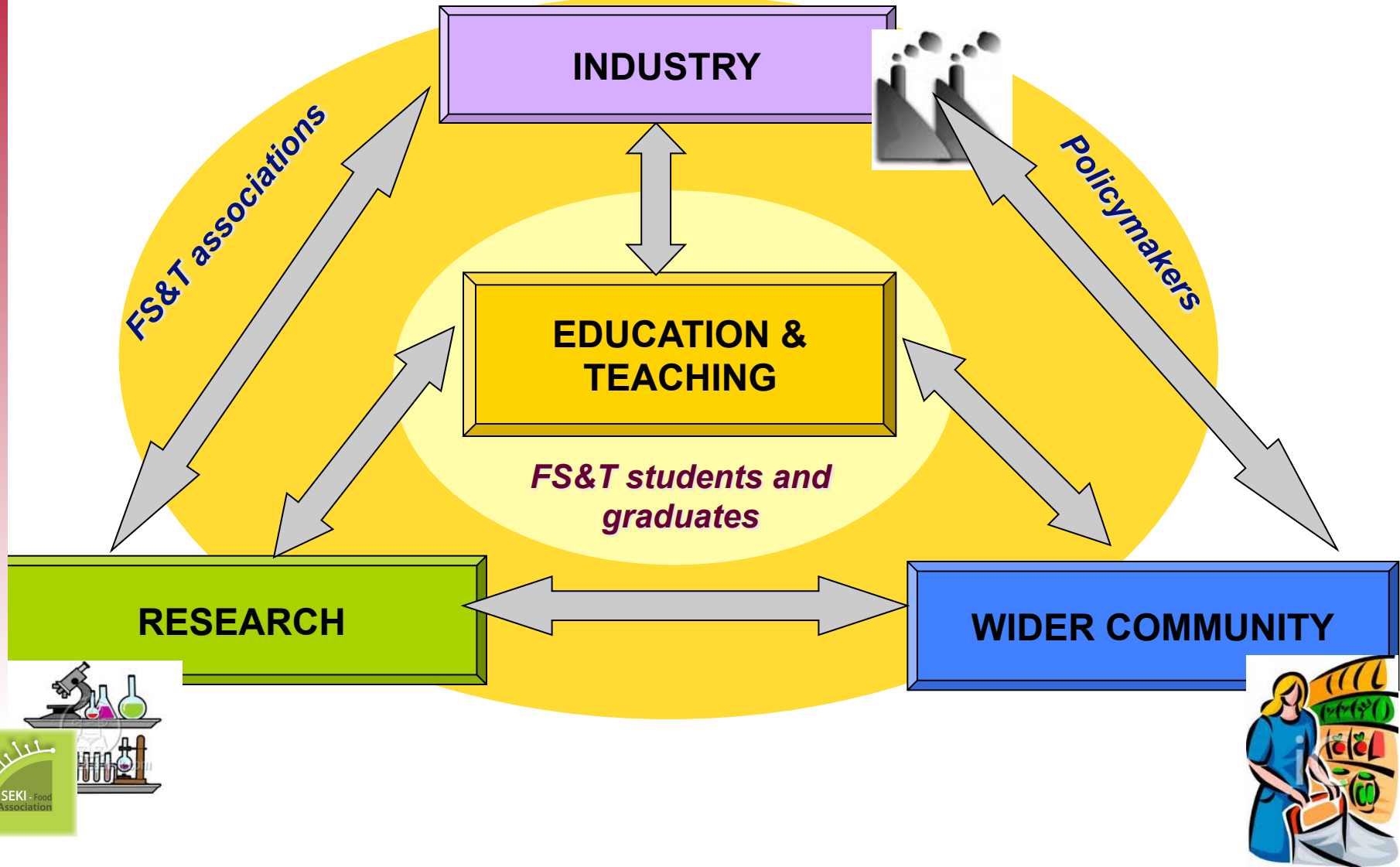
promoting
synergies
between
research,
education
and
industry



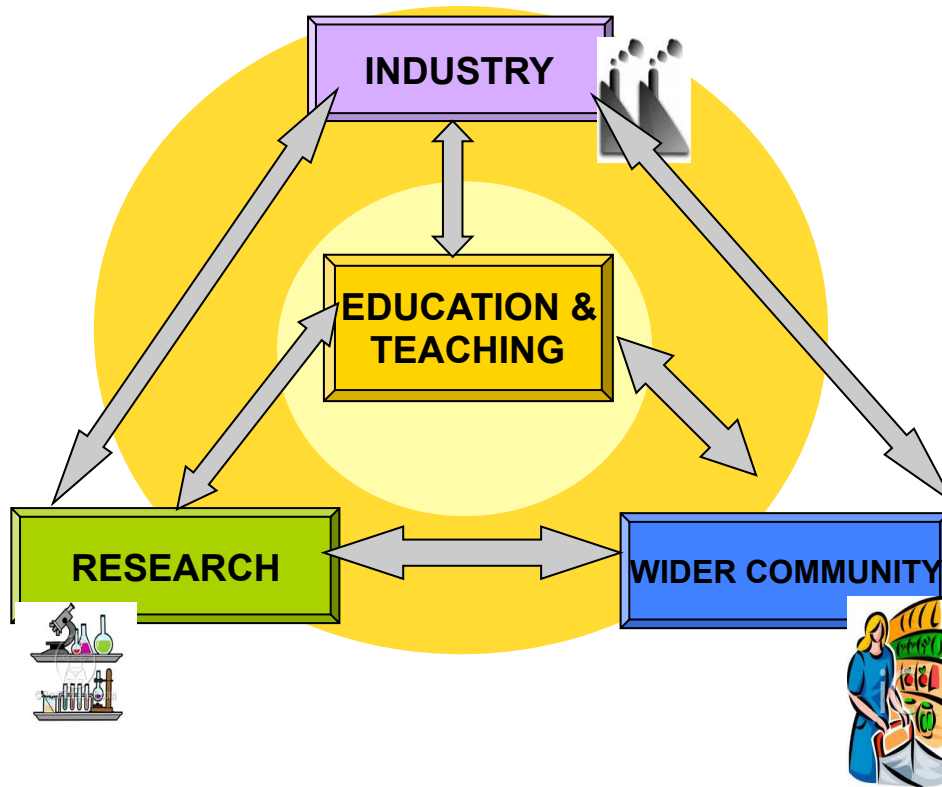
EDUCATION/RESEARCH/INDUSTRY INTERFACES TOWARDS THE INNOVATION OF THE FOOD CHAIN



EDUCATION/RESEARCH/INDUSTRY INTERFACES TOWARDS THE INNOVATION OF THE FOOD CHAIN



EDUCATION/RESEARCH/INDUSTRY INTERFACES TOWARDS THE INNOVATION OF THE FOOD CHAIN



Further approaches and tools under evaluation for further projects

- Development of FS&T HE programmes meeting society and job market expectations
- implementation of the role of industry in training and teaching to favour the development of the desired and required skills
- implementation of interactions with the other policymakers
- internationalisation
- Continual professional development and certification

Thank you for the kind attention



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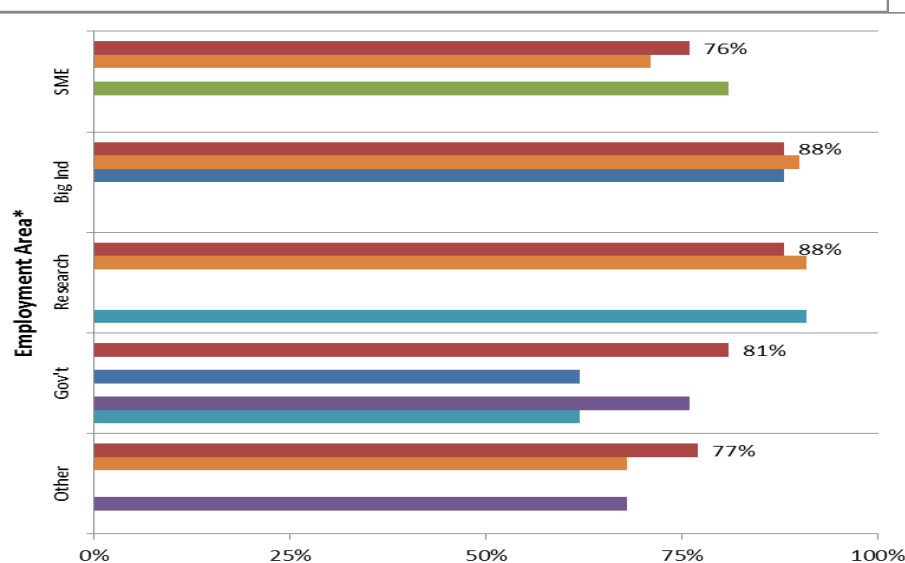
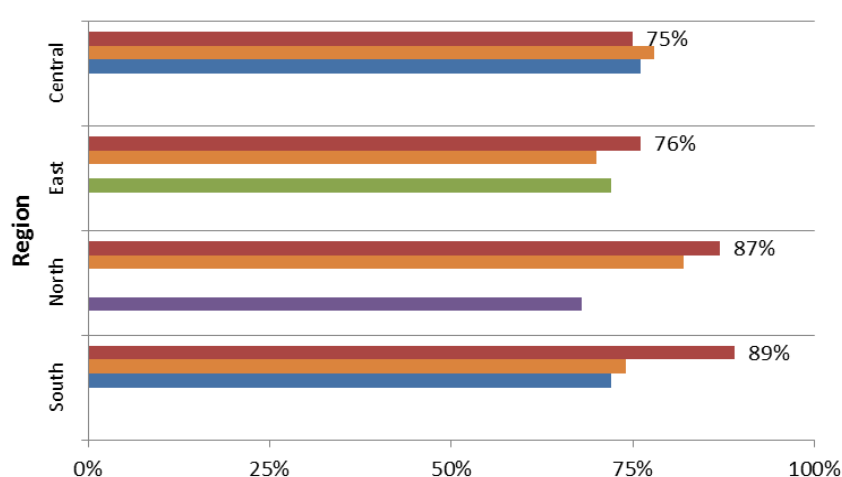
track_fast  Europe's Food Science and Technology
on a Fast Track



(New) skills to meet job market requirements

Top Food (sector-specific) skills in currently employed FSTs

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



Source: FP7 Track Fast project, 2012

(New) skills to meet job market requirements



Top Soft Skills in currently employed FSTs

- Communicating
- Managing Information & Computer Literacy
- Working With Others
- Participating in Projects & Tasks

