17th Workshop
Developments in the Italian PhD Research on Food Science, Technology and Biotechnology

The ISEKI_Food 4 project:
Towards the innovation of the Food Chain through the modernisation of Food Studies

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20 settembre 2012, Cesena (IT)
Main training and educational goals of HE institutions

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

*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
Key characteristics of graduates in Food Studies

- **Education and Training**
- **Technical speciality**
- **Ethical & society Impact/role of profession**

Food science, technology/engi neering,...

Multidisciplinary Transdisciplinary
Bridges between stakeholders

Central and key role

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.

The history of the ISEKI_Food projects....


(2002 - 2005) 2002 - 2005


112 partners/30 countries

97 partners/30 countries

89 partners/27 countries

Integrating Safety and Environment Knowledge In Food towards European Sustainable Development

37 partners/24 countries

53 partners/30 countries

Internationalisation

Sustainability and Exploitation

Innovation

Integrating Food Science and Engineering Knowledge Into the Food Chain
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-ISEKI_Food 3

**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

**Education-Research-Industry interactions**
- e-journal
- ISEKI_Food Conference
- Innovative teaching and training materials

See: www.iseki-food.eu
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
IFOOD4: rationale

• Enhancing employability to serve Europe’s needs
• Providing Quality Higher Education for all
• Strengthening mobility for better learning
  • Academic and professional recognition
  • Joint programmes and degrees
  • International openness

See also EHEA, Bucarest Communiqué, April 2012
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 curricula in Food studies

Innovative teaching tools

Virtual platform for PhD students networking and training

Teaching staff framework and pilot summer school
Partners (officials):
- In total: 89
  - EU: 86
  - No-EU: 3 (Israel, Brasil, United States)

Countries (official):
- In total: 30
  - EU: 27
  - No-EU: 3 (Israel, Brasil, United States)
IFOOD4: network profile - eligible

[Map of Europe showing countries with red dots indicating eligible locations. The map includes the following countries: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, The Netherlands, Turkey, United Kingdom.]
Associated partners:

- In total: 42
- EU: 6
- No-EU: 36
IFOOD4 - Work plan

8 Work Packages with different tasks and activities

Management (WP8)
Implementation (WP3, WP4, WP5, WP6)
Exploitation (WP7)
Dissemination (WP 2)
Quality Project (WP 1)

WP1 – Project Quality Plan
WP2 - Project Dissemination
WP3 – New Skills for New Jobs
WP4 – Qualification of Higher Education Teaching Staff
WP5 – Third cycle degree and technology transfer
WP6 – Innovative Teaching Tools
WP7 – Exploitation
WP8 - Project Management
IFOOD4 - Work plan

WP1 QUALITY PROJECT

WP2 DISSEMINATION

WP3 New skills for new jobs

WP4 Qualification of HE teaching staff

WP5 Third Cycle degree and technology transfer

WP6 Innovative teaching tool

WP7 EXPLOITATION

WP8 Management
**IFOOD4 – WP and expected outcomes**

**WP3**
New skills for New jobs

Tools to implement and modernise Food Studies programmes and promote their internationalisation

- Hard/technical and Personal skills (communication, team working abilities)
- Teaching materials
- Joint degrees
Qualification Frame for Higher Education Teaching Staff

- Development of educational material
- The recognition/validation of the learning modules
- Framework to offer a teaching qualification awarded by the IFA
IFOOD4 - Work plan

• Virtual Platform for doctoral candidates to favour their networking and training

• SURVEY (for needs)!
  • RESULTS (later.....)

WP5
Third Cycle degree and technology transfer
• Virtual Platform for doctoral candidates to favour their networking and training

WP5
Third Cycle degree and technology transfer

ABOUT US
OBJECTIVES
CONTACT

Soft PhD skills related material
Relevant PhD articles
New for members
PhD Associations
Upcoming events
Forum

PhD students
El tema principal del artículo es la predicción del clima y cómo afecta a las empresas y sectores relacionados. El texto se centra en la importancia de desarrollar estrategias de adaptación y resiliencia ante los cambios climáticos. Se analizan los retos y desafíos que enfrentan las empresas en este contexto.

Lo anterior se presenta en un enfoque interdisciplinario, brindando una visión integrada de las implicaciones del cambio climático. Se destacan las importantes contribuciones de la ciencia y las tecnologías para abordar estos desafíos.

Además, se discuten los roles y responsabilidades de diferentes actores, incluyendo gobiernos, empresas y ciudadanos, en el manejo de estas cuestiones. Se resaltan las necesidades de investigación y políticas que apoyen la adaptación y mitigación de los efectos del cambio climático.

El artículo concluye con una reflexión sobre la importancia de la educación y la sensibilización pública en la lucha contra el cambio climático. Se concluye con un llamado a la acción, reconociendo que la respuesta a esta crisis requiere un esfuerzo coordinado y colaborativo de todos los sectores.

En resumen, el artículo aborda de manera exhaustiva el tema del cambio climático y sus impactos, destacando las implicaciones para las empresas y sectores económicos. Se propone una visión integral de la cuestión, destacando la importancia de la investigación, la educación y la colaboración en la lucha contra el cambio climático.

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**Referencias:**

IFOOD4 - Work plan

WP6
Innovative teaching tools

TARGET USERS
• Students
• Teachers
• Professionals

Series Editor: Kristberg Kristbergsson

2012
**IFOOD4 - Work plan**

**WP6**

Innovative teaching tools

**TARGET USERS**
- Students/PhD students
- Teachers
- Professionals

**Under preparation.....**

**Physical Chemistry for Food scientist**

“Consumer driven development of food and health and wellbeing”
IFOOD4 - Work plan

WP6
Innovative teaching tools

Teaching materials.....database....
IFOOD4 - Work plan

WP6
Innovative teaching tools

Virtual labs on food processing topics
IFOOD4 - Work plan

WP2
DISSEMINATION

NEWSLETTER (quarterly)
IFOOD4 - Work plan

WP2
DISSEMINATION

WORKSHOPS

- Understanding, measuring and predicting the shelf life of foods - Theory and Application Greece 2012
- 5th Bioencapsulation Training School for early stage researchers, Nantes 2013
- ISOPOW 2013
- ISPOW 2013
IFOOD4 - Work plan

WP2 DISSEMINATION

WEBSITE

www.iseki-food4.eu
IFOOD4 - Work plan

Webinars

WP7 EXPLOITATION
IFOOD4 - Work plan

Pilot Summer School for teachers in Food S&T

....in 2013: final programme
**IFOOD4 - Work plan**

**3° ISEKI_Food Conference**

An International “open” forum for all the stakeholders of the whole food chain (students, researchers, education scientists, Technologists, Representative of government agencies, Industry representatives and trainers, Food consumers and Wider community)

**WP7 EXPLOITATION**

**3° Int. ISEKI_Food, May 2014 (Greece)**

Continual Professional Development for the future Food Scientists and Technologist

[www.isekiconferences.com](http://www.isekiconferences.com)
IFOOD4 - Work plan

International Journal of Food Studies
Open source, international peer-reviewed

WP7 EXPLOITATION

www.iseki-food-ejournal.com/
STARTING/STARTED ACTIVITIES...
WP5: Third cycle degree in the training of FS&T professional and scientists

**TASK:** Revised curricula proposal for PhD studies in Food Science and Technology in the food work market and in society

**Methodology:** Survey different survey to academia and industry/professional representatives

**AIMS of the survey:**
- To evaluate the PhD studies contributions in training scientists, workers in food industry and practitioners.
  - To evaluate desirable soft skills that PhD students should acquire throughout their doctoral studies.
WP5: Third cycle degree in the training of FS&T professional and scientists

ACADEMIA: 66 replies from 33 countries
INDUSTRY: 61 replies, from 18 countries
## Activities:

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<tr>
<td>8</td>
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<tr>
<td>9</td>
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<td>compulsory</td>
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</table>

- The most common requirements with regard to formal doctoral training among the institutions that already implemented the new model for PhD studies are summarized in the Table.
- This does not mean that PhD students are required to obtain all these activities/outputs to obtain the PhD degree; usually the students are required to combine them to reach a minimum.
- Most of institutions give more importance to activity number 2.
- For a number of institutions, activities 1, 2, 7,8 and 9 are compulsory.
Is it compulsory for the PhD student to contribute to education on bachelor or master level?

Existing control procedures and activities established to follow the PhD studies (i.e. reports yearly about the progress of his/her PhD, Supervisory Committee, Faculty Doctoral Committee):
In the last years, most of your PhD students find a job in the following sectors:

- Academia public: 60%
- Research centers: 15%
- Industry: 22%
- Research sector: 3%

In the near future, probably most of your PhD students will find a job in the following sectors:

- Industry: 37%
- Research centers: 22%
- Academia public: 35%
- Research sector: 6%
Do you have an **International doctoral degree** established in your institution?

- **Yes**: 17%
- **No**: 83%

**ACADEMIA**
Does your organization conduct R+D activities?

- Yes: 90%
- No: 10%

How often?

- Continuously: 75%
- From time to time: 25%
Do you have employees with a PhD degree?

If not, what is the reason?

- No need: 26%
- Limited size of the company: 29%
- High salary of PhD: 20%
- Other: 14%
- No R+D activities: 11%
ACADEMIA versus INDUSTRY
Do you consider attainment of a PhD degree increases your job opportunities /better paid job/salary?

**Academia**

- PhD degree increases your job opportunities
  - Academia public: 77%
  - Research centers: 16%
  - Industry: 4%
  - Research sector: 3%

- PhD degree means finding a better paid job/salary
  - Yes: 57%
  - No: 43%

**Industry**

- PhD degree increases your job opportunities
  - Academia public: 58%
  - Research centers: 24%
  - Industry: 8%
  - Research sector: 10%

- PhD degree means finding a better paid job/salary
  - Yes: 54%
  - No: 46%
ACADEMIA/INDUSTRY: Do you think post-docs in your country are well trained for:

**Research:**
- Yes: 98%
- No: 2%

**Industry:**
- Yes: 22%
- No: 78%

**Business:**
- Yes: 14%
- No: 86%

ACADEMIA:
- Post-docs are well trained for Research: 86%
- Post-docs are well trained for Industry: 52%
- Post-docs are well trained for Business: 83%

Academia:
- Post-docs are well trained for Research: 92%
- Post-docs are well trained for Industry: 98%
- Post-docs are well trained for Business: 98%
Do you think PhD students will need new skills for facing the future labour market perspectives?

ACADEMIA

PhD students will need new skills

No 5%

Yes 95%

INDUSTRY

PhD students will need new skills

No 5%

Yes 95%
Main Report Conclusions:

1. Changes in the organization of doctoral training are emerging which is witnessed by the development of new doctoral schools in many European countries.

2. Non-conventional structured programmes of activities are needed, ranging from advanced seminars and courses on research topics focusing on training of transferable skills to face the changes in the labour market perspectives of doctoral graduates and acting as a ‘quality label’ by enhancing the career opportunities of the PhD’s.

3. International (European) cooperation between institutions is insufficient. Therefore, international links and cooperation should be encouraged throughout the establishment of joint doctoral programs awarded by two or more institutions of different countries and international doctoral degrees.
Thank you for the kind attention

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