



“The AgriFood Systems in Europe: Cooperation opportunities between NFTPs and Farmers Associations ”

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Daniele Rossi

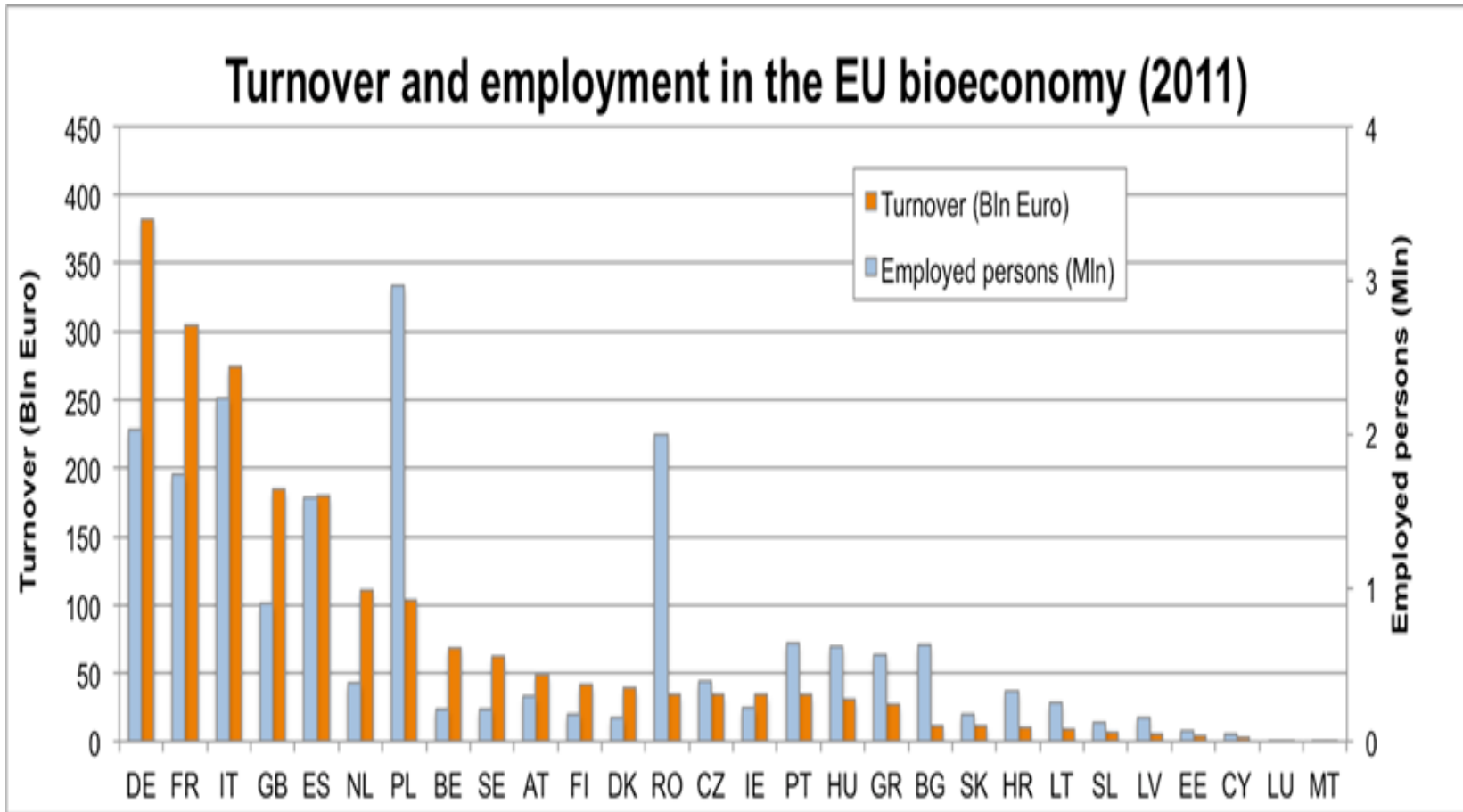
EU Coordinator of National Food Technology Platforms - **NFTPs**

Chairman of the Research & Innovation WP – **Copa-Cogeca**

Delegate Research & Innovation – **Confagricoltura**

P. Director General – **Confindustria - Federalimentare**





Source: SCAR – EUROSTAT 4th foresight 2015



2015 EU BIO-ECONOMY



EU bio-economy turnover of 2.690 billion € with 22 million employees.

Sector	Turnover (Billion €)	Employees (million)	Source
Food & Drink Industry	1.186	4.4	FoodDrinkEurope
Agriculture	430	12,0	COPA-COGECA
Fisheries	14	0.5	FAO
Paper, Leather etc.	428	1,8	CEPI
Forestry	337	2,0	CEI-BOIS
Others (build, textile, seeds, breeds.....)	227	1,0	CEFIC - CIVA
Bio-based materials			BBI
<i>Chemistry</i>	60 (est)*	0,15 (est)*	USDA, Arthur D Little, Festel, McKinsey, CEFIC
<i>Enzymes</i>	1 (est)*	0,005 (est)*	Amfep, Novozymes, Danisco/Genencor, DSM
<i>Biofuels</i>	7	0,15	EBB, eBio
Total	2.690	22	

THE NATIONAL PICTURE

A key industry in the economies of the EU Member States

#1 employer

The food and drink industry is the biggest employer in manufacturing in half of the Member States

66%

Share of turnover of the EU's 5 largest food and drink producers

- The food and drink industry ranks among the top three manufacturing industries in terms of turnover and employment in most Member States.
- France, Germany, Italy, the UK and Spain are the largest EU food and drink producers by turnover.

Food and drink industry data as published by FoodDrinkEurope National Federations¹ (2015)

	Employment ranking in manufacturing	Turnover (€ billion)	Value added (€ billion)	Number of employees (1,000)	Number of companies
Austria	5	22.7	5.5	83.3	3,893
Belgium	1	48.6	8.1	88.5	4,452
Bulgaria	2	5.2	1.0	95.6	6,182
Croatia	1	5.3	1.2	61.0	3,256
Czech Republic	4	13.3	2.7	115.4	9,157
Denmark	2	25.4	4.5	61.6	1,607
Estonia	2	1.8	0.4	15.4	575
Finland	4	10.9	2.6	37.6	1,846
France	1	179.9	45.0	427.2	57,290
Germany ²	3	168.6	36.7	569.2	5,812
Greece ³	1	14.2	2.8	87.2	1,225
Hungary	1	11.5	2.0	106.6	6,812
Ireland	1	27.1	-	47.3	1,583
Italy	2	132.0	24.2	427.0	56,315
Latvia	1	1.7	0.4	23.7	1,120
Lithuania	1	4.0	0.8	44.1	1,609
Netherlands	1	70.0	11.3	128.6	6,065
Poland	1	55.6	9.9	417.5	14,534
Portugal	1	15.3	2.9	107.5	10,996
Romania	1	12.0	-	180.8	8,826
Slovakia ²	3	4.0	0.8	29.3	278
Slovenia	3	2.2	0.5	16.5	2,258
Spain	1	104.2	19.3	349.2	26,016
Sweden	4	18.1	4.5	50.5	4,240
United Kingdom	1	131.6	38.9	418.2	6,620

¹ Or by Eurostat (SBS)

² Companies with more than 20 employees

³ Small food and drink producers excluded

R&D AND INNOVATION

Innovation¹ activities of EU² food and drink companies: crucial for competitiveness

46%

Share of innovative companies

21%

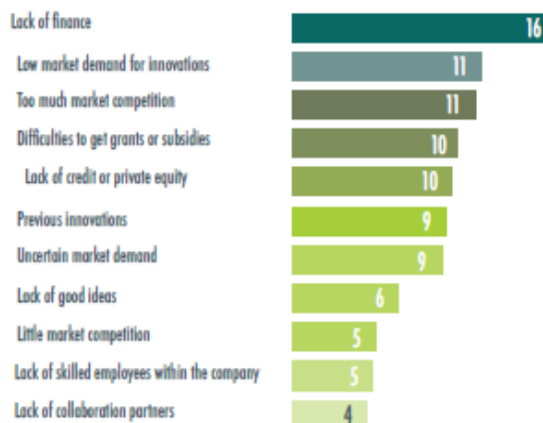
Share of non-innovative companies that did not innovate due to barriers

- During the period 2012-2014, more than one quarter of all food and drink companies reported marketing innovations. Organisation, process and product innovations took place in 20% of all companies.
- Half of product and/or process-innovative food and drink companies were engaged in acquisition of machinery, equipment and software. 45% run in-house R&D activities.
- Key barriers to innovation were: lack of finance, low market demand for innovations and too much market competition.
- 62% of innovative food and drink companies introduced innovations with environmental benefits.

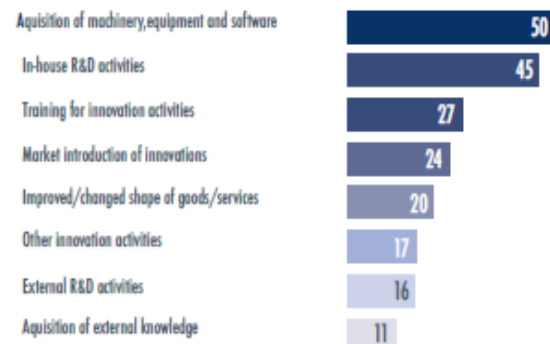
Types of innovation of EU² food and drink companies (2012-2014, % of total)³



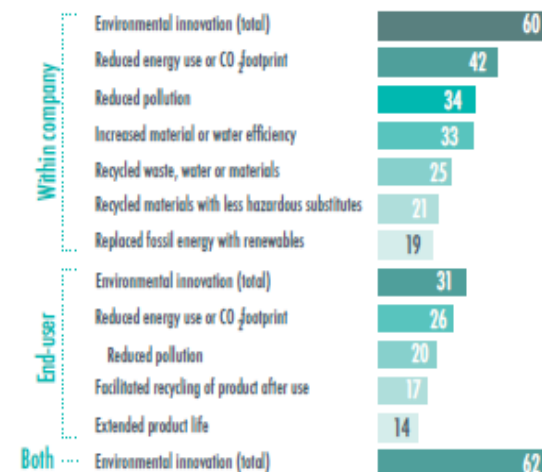
Important barriers to innovation for EU² food and drink companies (2012-2014, % of non-innovative companies)



Innovation activities of EU² food and drink companies (2012-2014, % of product and/or process-innovative companies)³



EU² food and drink companies that introduced innovations with environmental benefits (2012-2014, % of innovative companies)³



¹ Innovation is defined here as: the implementation of a new or significantly improved product or process; a new marketing method; a new organisational method.

² Based on available data

³ Individual companies may have introduced more than one of these types of innovation.

Source: Eurostat (Community Innovation Survey, 2014)

INNOVATION AND CONSUMER TRENDS

Innovation key to greater consumer choice

Pleasure

Leading driver of food innovation in Europe

#1

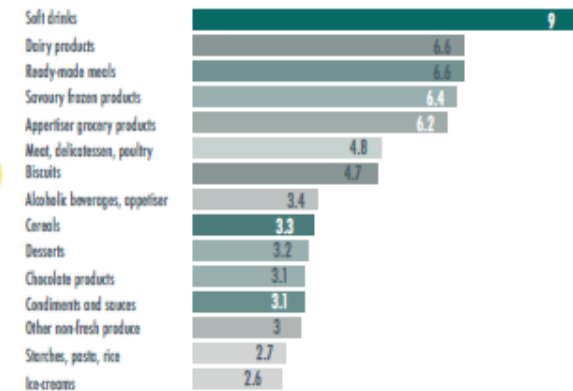
Soft drinks are the world's most innovative food sector

- Drivers of innovation can be divided into 15 trends, grouped along five axes, corresponding to general consumer expectations: pleasure, health, physical, convenience and ethics.
- Pleasure, including variety of senses and sophistication, is the leading driver of food innovation in Europe, with a 54% share in 2016.
- Health accounts for nearly one in four innovations launched. All the health trends (natural, medical and vegetal) gained ground in 2016, making health the most dynamic driver of food innovation in Europe in terms of growth.
- Soft drinks are world's leaders in innovation in 2016, pushing dairy products to second place. Ready-made meals stay at the third place.

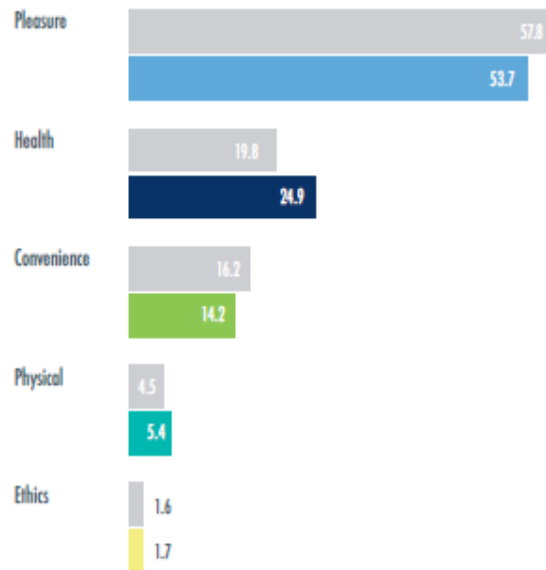
Food innovation trends



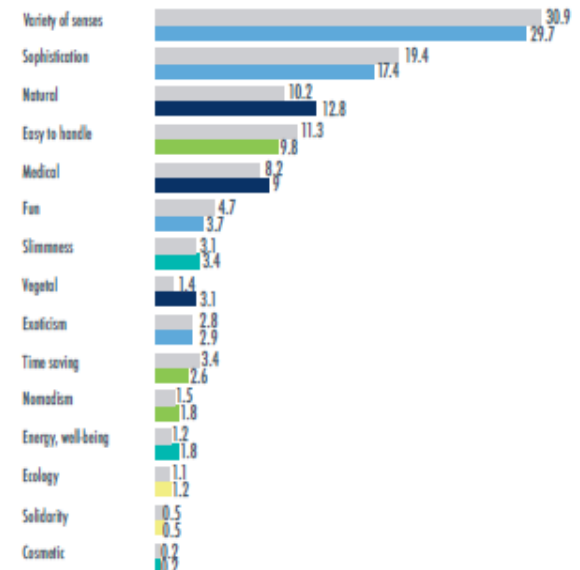
The world's 15 most innovative food sectors (2016,%)



Drivers of innovation in Europe (2015-2016,%)



Food innovation trends in Europe (2015-2016,%)



Source: XTC World Innovation Panorama 2017
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■ 2015
■ 2016

European long-term priorities of The European Technology Platform Food for Life

- A more **competitive agri-food industry and chain** in Europe;
- **More innovation** in farming and food processing:
- **Farm for Tomorrow - Food Factory of the Future**
- **Resource efficiency** in the Circular Bioeconomy
- **Improving added value of high quality foods**, traditional and PGI ;
- Dietary needs of the **elderly**, in **pregnancy**, in others target groups;
- **Early detection** of chemical and microbiological **hazards**;
- **Low cost and low scale processing**, **tech transfer** and networks for SMEs;
- Impact of food and drink **policies** in Europe (VAT, excise, access, comm.).



Figures NFTPs Meetings



- More than **35.000** SMEs and **4.600** national stakeholders involved (Industry, Farmers, Universities, Research centres, Consumers, National Public Bodies, Retailers, Financial institutions).
- **87** strategic documents visible and published on ETP website (SRA, Implementation Plan, Vision document etc.)
- **2** mln € yearly availability of public national funds specifically for NTPs
- **450** mln € yearly availability of public national funds for food chain research

1. Rome, 14.04.2007
2. Brussels, 14.09.2007
3. Brussels, 6.06.2008
4. Budapest, 12.09. 2008
5. Barcelona, 11.05.2009
6. Riga, 2.10.2009
7. Brussels, 4.03.2010
8. Rimini, 16.09.2010
9. Budapest, 2.05.2011
10. Bonn, 2.11.2011
11. Istanbul, 11.06.2012
12. Paris, 23.10.2012
13. Vienna, 22.04.2013
14. Brussels, 3.09.2013
15. Athens, 11.03.2014
16. Turin, 6.10.2014
17. Prague, 13.04.2015
18. Athens, 11.11.2015
19. **Bruxelles, 20.04.2016**
20. **Wien, 28.11.2016**
21. **Madrid, 26.05.2017**
22. **Sitges, 16.11.2017**
23. **Ljubljana, 18.05.2018**

Challenges and responses for Food Manufacturers



- Scarcity in **raw materials**;
- **Globalization** to manage;
- **Local food chains and markets** enhanced;
- **Buyers and Retailers concentration**;
- **New ways of consumption**;
- High **stratification** of consumption;
- **New glocal values**: ethics, envi, ethnic, authentic, natural ...;
- **New nutritional** and diet values;
- **New policies** on food&drink: neo protect, neo prohibi, neo info;
- **New trade policies**: Europe, Efta, Nafta, Asian, Ttip, Med, Mercosur.

- **Precision farming** and sustainability;
- Raw materials **diversity**; nutritional values
- **Low cost technologies** and downscaling
- Resource and manufacturing **efficiency** to improve;
- **Horizontal** Innovation to be incorporated: new mats., ICT, process, pack
- From old to **young generation of entrepreneurs**;
- **Food Supply Chain** and **Collaborative Networks**;
- New **distribution systems** and **business models**;
- **Flexibility and differentiation** to face new ways of consumption;

A food-system approach is needed

Moving from business-as-usual agriculture to Sustainable farming is a complex process which requires a system approach

Reshape the role of the farmer: from mere producer of food and commodities, into "wise manager of the natural capital"

This transition must be backed by effective policies (CAP) supported with dedicated Research & Innovation programmes



European Commission

FOOD 2030

EU R&I Policy Framework to future-proof our nutrition & food systems



Priorities

- NUTRITION** for sustainable and healthy diets
- CLIMATE** smart and environmentally sustainable food systems
- CIRCULARITY** and resource efficiency of food systems
- INNOVATION** and empowerment of communities

Drivers

- Research breakthroughs**
- Innovation and Investment**
- Open Science**
- International collaboration**

- Need for a systemic approach to future-proofing food systems by structuring, connecting and scaling-up R&I
- To provide evidence for policies and solutions (knowledge, methods, technologies, services, business models, etc.) addressing 4 priorities.

#FOOD2030EU

Working with private sector

European & National Technology Platforms

- stakeholder fora (academia, research & industry)
- mobilise stakeholders on agreed priorities, R&I agendas & roadmaps at EU/national level
- ETP 'Food for Life', 'Farm Animals Breeding', 'Plants for The Future', TP Organics, ...

Knowledge & Innovation Communities (KICs)

- PPP - EIT Food <https://www.eitfood.eu/about-us/>
- addressing innovation – education – business creation

The EU way – The Farmers' Mind Map

INNOVATIVE FARMERS & AGRI-COOPERATIVES

- **Enhanced Knowledge Exchange**
 - - Farmers learning from farmers
 - - Farmers leading Innovation
 - - Links between conventional and organic systems
- **Green Growth;**
 - - Efficient use of resources
 - - Active management of natural resources
 - - Climate change mitigation and adaptation
 - - Closing the yield gap
 - - Improved agrifood system productivity
- **Fair and Competitive Value Chains**
 - - Collaboration across all sectors in the chain
 - - New strategy for value chains and new business models
- **Healthy Farming;**
 - - Integrated pest management
 - - Dealing with emerging pests and diseases
 - - Enhancing biosecurity in housed livestock
 - - Plant and animal breeding for resilience and robustness



The European Way - Industry Hot Topics

- The food human axis: effect of ingredients, processing and way of consumption on human wellbeing;
- Low Scale Low Cost new technologies (ict, pilots, niches, efficiency ...)
- High quality stable and fresh food ready to eat with packaging extended shelf life;
- Consumer response to food price instability: from raw materials to retailers supplier;
- Valorization of genetic resources and technological improvements to increase the nutra-functional values of processed foods;
- New track systems and sustainable transportation and logistics, losses and waste reduction;
- Markers identification , integrity of varieties used in the production of traditional materials and food and DOP/IGP
- Sustainable production and new business models and value chains strategies

Needs of food SMEs, farmers, and other food businesses (1)

- They are **exposed to the same global trends and challenges** as any other members of the food system
- **Specific constraints** caused by limited resources (human, physical, financial), influenced by **vulnerability**
- To be made **aware** of new results, solutions, clear, concise, **user-friendly way, without travelling to abroad**
- **Access to new knowledge**, solutions, data, technical information in easily understandable format, **prepared for practical application to carry out their key task better**,
- **Access to technical and management advice** for adaptation of solutions, problem solving, implementation through **regular personal dialogue**, in mother **tongue**

Needs of SMEs and farmers (2)

- Proofs of benefits, **feasibility** of efforts invested into research based **innovation**
- Access to **reliable research and innovation partners and practical results, short time return**
- **Testing new** products, processes, methods, solutions, machinery at **reasonable costs**
- **Access to new facilities, machinery , technical solutions at affordable price.** Resource eff., flexibility.
- **Access to new varieties, breeds, raw material, ingredients, packaging** with improved properties,
- **Access to management and technical skills** and **knowledge for innovation**
- **Financing** innovation projects finding the **appropriate solutions, knowledge** and skills
- Access to **information on consumer needs, preferences and behaviour**, market trends, changes and opportunities
- **Compliance to legal** requirements

How food businesses and farmers can collaborate on innovation through NFTP

Application of system approach of food provision, the value chain management concept to access **complementary resources, capabilities, competences** of value chain partners **jointly** for **joint** benefits

Systematic dialogue between practice based **intermediaries of innovation, innovation networks** owned by the **food businesses** (federations, clusters, platforms) and **farmers** (farmers' association) on joint and/or complementary strategies, priorities, project ideas, exchange of experiences

Collective research on topics having joint interest for food SMEs and food producing farmers

Exchange of best **practice guidelines, inventories** of **successful cases**.

Provision of harmonised capacity building to value chain members on management, on topics to serve consumers/customers needs better.

The European Network of the National Food technology Platforms NFTP may establish a working group on promoting digitalisation and application of advanced manufacturing, Industry4.0 solutions in the food processing. The NFTP, invite to collaborate the regional clusters involved into the topic as well: “ **Establishing pilot testing facilities for food industry applications of digital, advanced manufacturing, industry4.0 solutions; training to develop the necessary competences and skills.**”



THANK YOU FOR YOUR ATTENTION !!!

d.rossi@confagricoltura.it

copa***cogeca**
ei european farmers european agri-cooperatives