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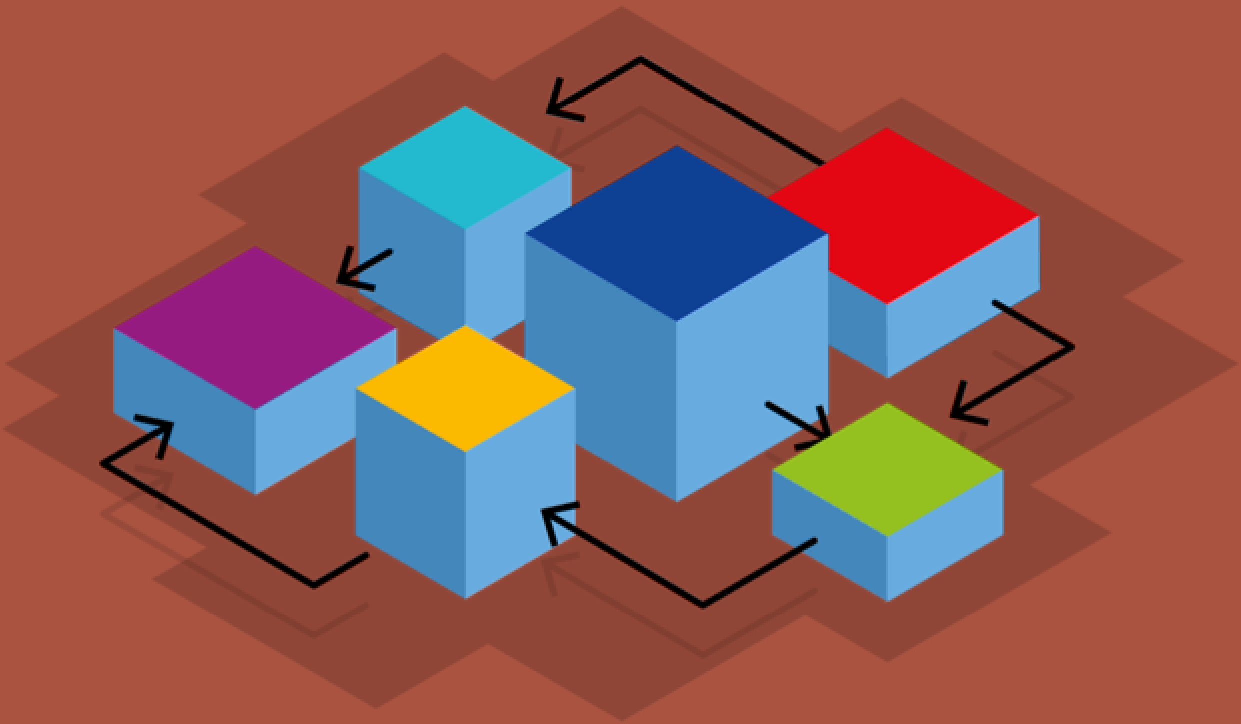

European Cluster Observatory

REPORT

Priority Sector Report: Agrofood

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Internal Market, Industry, Entrepreneurship and SMEs

European Cluster Observatory in Brief

The European Cluster Observatory is a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe. It is primarily aimed at European, national, regional and local policy-makers and cluster managers and representatives of SME intermediaries. It is an initiative run by the 'Clusters, Social Economy and Entrepreneurship' unit of the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs and aims to promote the development of more world-class clusters in Europe, notably with a view to promoting competitiveness and entrepreneurship in emerging industries and facilitating SMEs' access to clusters and internationalisation activities through clusters.

The ultimate objective is to help Member States and regions to design smart specialisation and cluster strategies that will help companies to develop new, globally competitive advantages in emerging industries through clusters, and in this way to strengthen the role of cluster policies in boosting Europe's industry as part of the Europe 2020 Strategy.

In order to support evidence-based policy-making and partnering, the European Cluster Observatory provides an EU-wide comparative cluster mapping with sectoral and cross-sectoral statistical analysis of the geographical concentration of economic activities and performance. The European Cluster Observatory provides the following services:

- **a biannual 'European Cluster Panorama' (cluster mapping)** providing an update of and extension to the statistical mapping of clusters in Europe, including for ten related sectors (i.e. cross-sectoral) and a correlation analysis with key competitiveness indicators;
- **a 'European Cluster Trends' report** analysing cross-sectoral clustering trends, cluster internationalisation and global mega trends in industrial transformation; identifying common interaction spaces; and providing a forecast for industrial and cluster opportunities;
- **a 'Regional Ecosystem Scoreboard'** setting out strengths and weaknesses of regional and national ecosystems for clusters, and identifying cluster-specific framework conditions for three cross-sectoral collaboration areas;
- **a 'European Stress Test for Cluster Policy',** including a self-assessment tool accompanied by policy guidance for developing cluster policies in support of emerging industries;
- **a showcase of modern cluster policy practice, provided in the form of advisory support services to six selected model demonstrator regions**. The services offered include expert analysis, regional survey and benchmarking reports, peer review meetings and policy briefings in support of emerging industries. The policy advice also builds on the policy lessons from related initiatives in the area of emerging industries;
- **the European Cluster Conferences** 2014 and 2016, which bring together **Europe's cluster policy-makers and stakeholders** for a high-level cluster policy dialogue and policy learning, and facilitate exchange of information through, e.g. webpages, newsletters and videos.

More information about the European Cluster Observatory is available at the EU cluster portal at: http://ec.europa.eu/growth/smes/cluster/observatory/.

This work has been carried out under a service contract for the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. It is financed under the Competitiveness and Innovation Framework programme (CIP) which aims to encourage the competitiveness of European enterprises. The views expressed in this document and the information included in it do not necessarily reflect the opinion or position of the European Commission.

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1. Introduction

Food remains a central need of all human societies. Key global trends are shaping the demands that modern agriculture and food production have to meet: A rising global population requires access to safe and reliable sources of nutrition. Aging and more health-conscious societies need different types of food products, with new functional characteristics. And a global ecosystem under intense pressure asks for an agro-food industry that significantly reduces its environmental impact.

Agrofood is also an important economic driver for European many regions. It emerged as one of the most prominent domains wit EU regions smart specialization strategies.[1] It is also one of the key thematic orientations of applications and selected cluster projects for new industrial value chains (INNOSUP-1) under Horizon2020.

Agriculture and food processing remain important sectors especially in regions with lower levels of current prosperity. The success that some advanced countries have in these markets – Denmark and the Netherlands are leading exporters of milk, pigs, and poultry – suggests that there is potential to upgrade. Agriculture and food are also in more advanced regions important sectors for achieving shared prosperity, providing employment and development opportunities for less-skilled parts of the labour force.

Agrofood is changing. Examples of key issues emerging in response to the global trends and societal challenges pointed out above are traceability and bioeconomy. Traceability captures the notion that consumers increasingly want to know where food products are coming from, how they have been produced, and through which channels they have made their way to their homes. This requires the use of new technologies as well as different business models and value chains. Bioeconomy refers to the use of biologically produced inputs into other industries, from biofuel to bio-based chemicals, plastics, and other products. Here a key issue is how to develop these new bio-based inputs in a way that is not creating trade-offs with food production and leads to better overall environmental outcomes.

Agrofood was not one of the ten emerging industries identified as part of the European Cluster Panorama and thus required a new definition. Using the Food Processing and Manufacturing as the core cluster category, we have also added the relevant industries from Livestock Processing, Fishing, and food-related Agricultural Inputs and Services. Finally, many farming- and processing-related industries, such as bread making, play a crucial role for the Agrofood complex, even if they were classified as local in the main classification. We have thus expanded the list of industries to include many of such basic agricultural inputs to be part of the Agrofood definition and indeed the local industries cover close to one third of the sector's employment.

[1] Presentation about the Agri-Food Platform by Katerina Ciampi Stancova, DG JRC

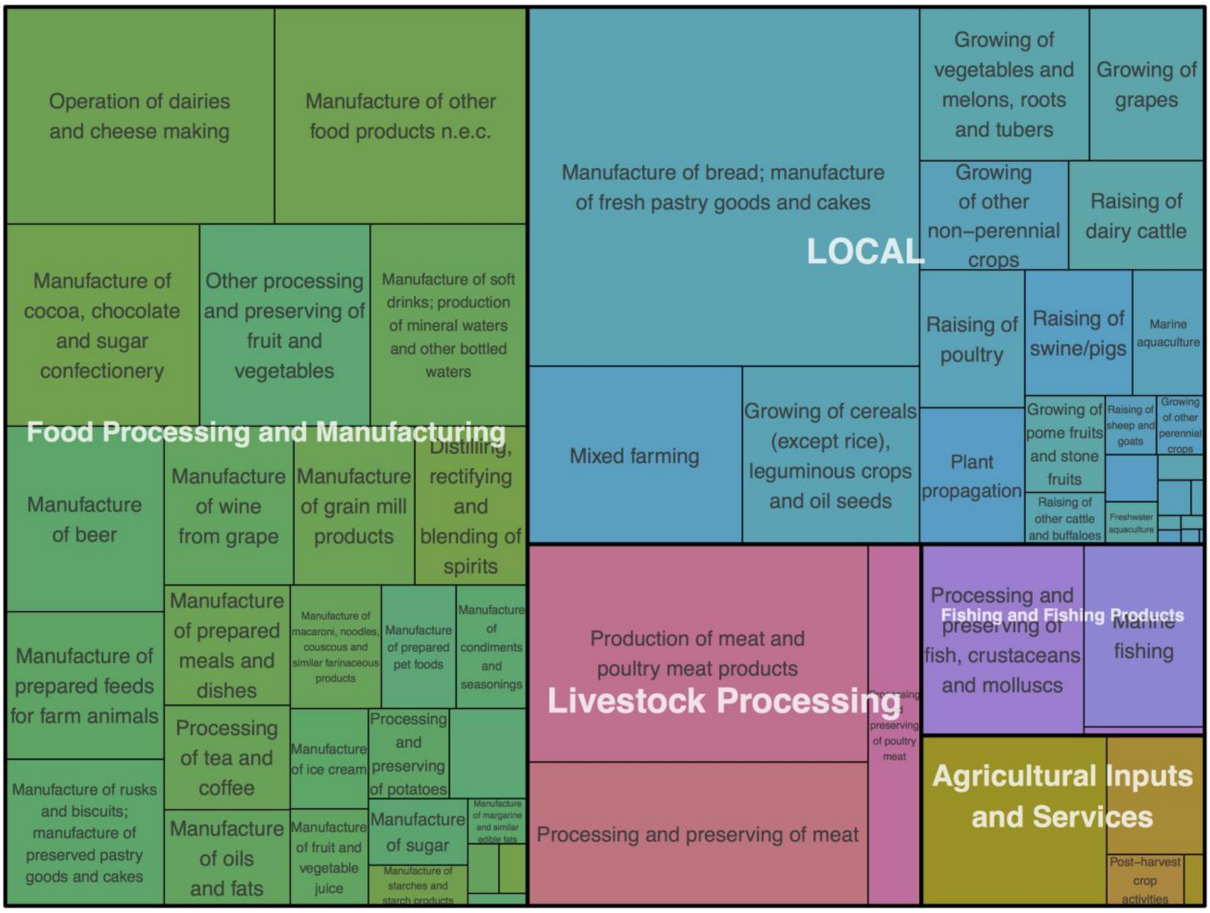
2. Overview

Table 1: Basic Facts on Agrofood

Indicator	Level in 2014	Change since 2008	Share of overall economy
Employment	7 195 730	0.02%	2.47%
Establishments	1 158 023	17.43%	2.06%
Average Wage	22 879	6.89%	71.18%
Gazelle Employment	115 279	N/A	2.74%

3. Composition

Figure 1: Agrofood industry composition[2]



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[2] *The size of the different boxes is proportional to industry employment*

Table 2: Occupational profile of employment in Agrofood

Occupation	Employment	Employment share	Overall employment share
Craft, Trade, Operators, Assemblers	3 125 400	56.1%	21.7%
Market-oriented Skilled Agricultural Workers	1 014 600	18.2%	1.1%
Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	824 200	14.8%	2.6%
Stationary Plant and Machine Operators	585 200	10.5%	2.6%
Drivers and Mobile Plant Operators	374 500	6.7%	4.5%
Other	326 800	5.9%	11.0%
Service, Sales, Elementary	1 155 600	20.7%	25.4%
Labourers in Mining, Construction, Manufacturing and Transport	343 500	6.2%	2.6%
Agricultural, Forestry and Fishery Labourers	322 300	5.8%	0.4%
Sales Workers	292 900	5.3%	6.6%
Other	196 800	3.5%	15.8%
Officials, Managers, Professionals, Technicians	996 700	17.9%	43.9%

4. Current Patterns and Leading Regions

Table 3: Europe's top locations[3] in Agrofood

#	Region	Region Name	Largest City	Employ-ment	LQ	Avg. Wage, PPP	Annual Growth	Gazelle Empl. Share	Stars
1	NO05	Vestlandet	Bergen	35 807	2.52	39 503	11.7%	7.3%	4
2	ES62	Murcia	Murcia	59 626	4.22	14 693	6.2%	2.8%	3
3	HU32	Eszak-Alfold	Debrecen	43 701	3.42	11 225	8.8%	3.7%	3
4	BG32	Severen tsen-tralen	Rousse	37 516	3.27	7 594	19.5%	1.7%	3
5	ES42	Castilla-La Mancha	Toledo	51 336	2.98	18 186	2.6%	3.7%	3
6	BG42	Yuzhen tsen-tralen	Plovdiv	50 446	2.66	4 650	35.1%	2.1%	3
7	BG33	Severoiztoch-en	Varna	33 919	2.55	7 625	25.0%	3.9%	3
8	BG34	Yugoiztochen	Burgas	36 504	2.53	5 604	30.1%	1.4%	3
9	FI1D	Northern and Eastern Fin-land	Oulu	47 753	2.53	12 593	214.3%	0.8%	3
10	ES61	Andalucía	Sevilla	176 474	2.38	15 145	5.2%	4.2%	3
11	FR52	Bretagne	Rennes	59 821	1.93	33 968	3.9%	7.2%	3
12	NO04	Agder og Ro-galand	Kristiansand	22 369	1.77	40 767	-1.9%	5.0%	3
13	LV00	Latvija	Riga	56 337	1.68	9 787	2.5%	4.6%	3
14	ITC4	Lombardia	Milan	67 607	0.59	37 190	13.9%	3.2%	3

[3] *We sort locations here and in all following sections by the number of stars, followed by LQ*

Figure 2: Leading regions in Agrofood

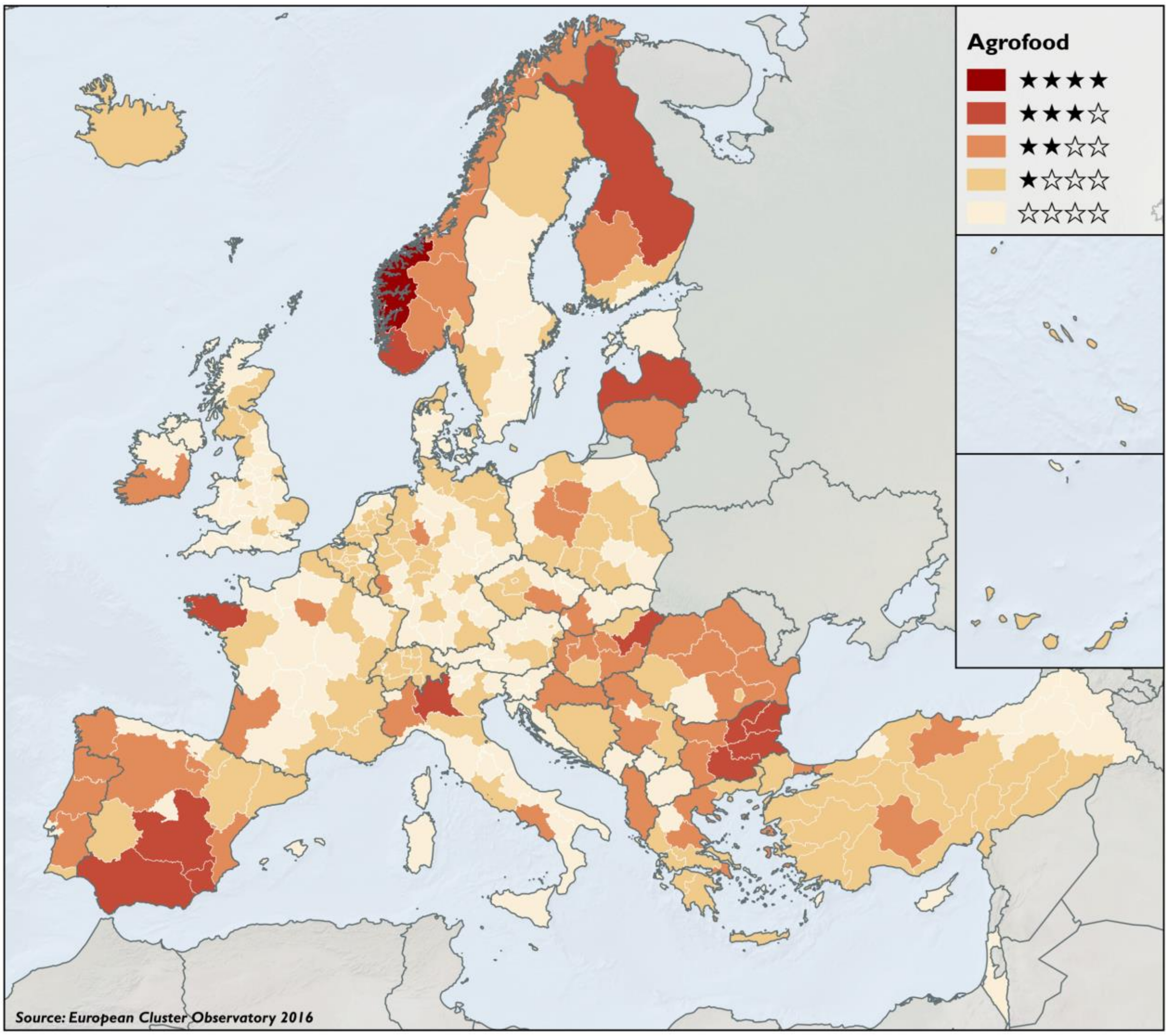
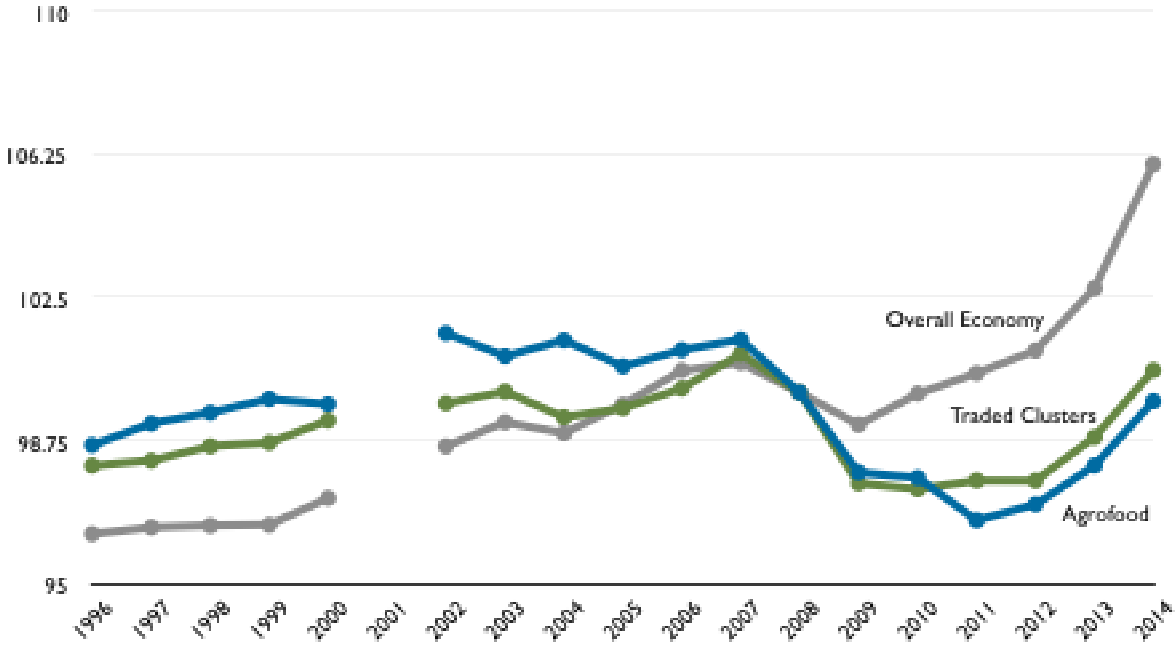


Table 4: Strategic profiles of top locations in Agrofood

Region	Region Name	Largest City	Top 3 Occupations
NO05	Vestlandet	Bergen	14 Hospitality, Retail and Other Services Managers 53 Personal Care Workers 54 Protective Services Workers
ES62	Murcia	Murcia	35 Information and Communications Technicians 71 Building and Related Trades Workers (excluding Electricians) 34 Legal, Social, Cultural and Related Associate Professionals
HU32	Eszak-Alfold	Debrecen	14 Hospitality, Retail and Other Services Managers 31 Science and Engineering Associate Professionals 44 Other Clerical Support Workers
BG32	Severen tsentralen	Rousse	71 Building and Related Trades Workers (excluding Electricians) 72 Metal, Machinery and Related Trades Workers 83 Drivers and Mobile Plant Operators
ES42	Castilla-La Mancha	Toledo	34 Legal, Social, Cultural and Related Associate Professionals 22 Health Professionals 74 Electrical and Electronic Trades Workers
BG42	Yuzhen tsentralen	Plovdiv	74 Electrical and Electronic Trades Workers 32 Health Associate Professionals 21 Science and Engineering Professionals
BG33	Severoiztochen	Varna	34 Legal, Social, Cultural and Related Associate Professionals 93 Labourers in Mining, Construction, Manufacturing and Transport 52 Sales Workers
BG34	Yugoiztochen	Burgas	
FI1D	Northern and Eastern Finland	Oulu	96 Refuse Workers and Other Elementary Workers 23 Teaching Professionals 61 Market-oriented Skilled Agricultural Workers
ES61	Andalucía	Sevilla	82 Assemblers 34 Legal, Social, Cultural and Related Associate Professionals 26 Legal, Social and Cultural Professionals

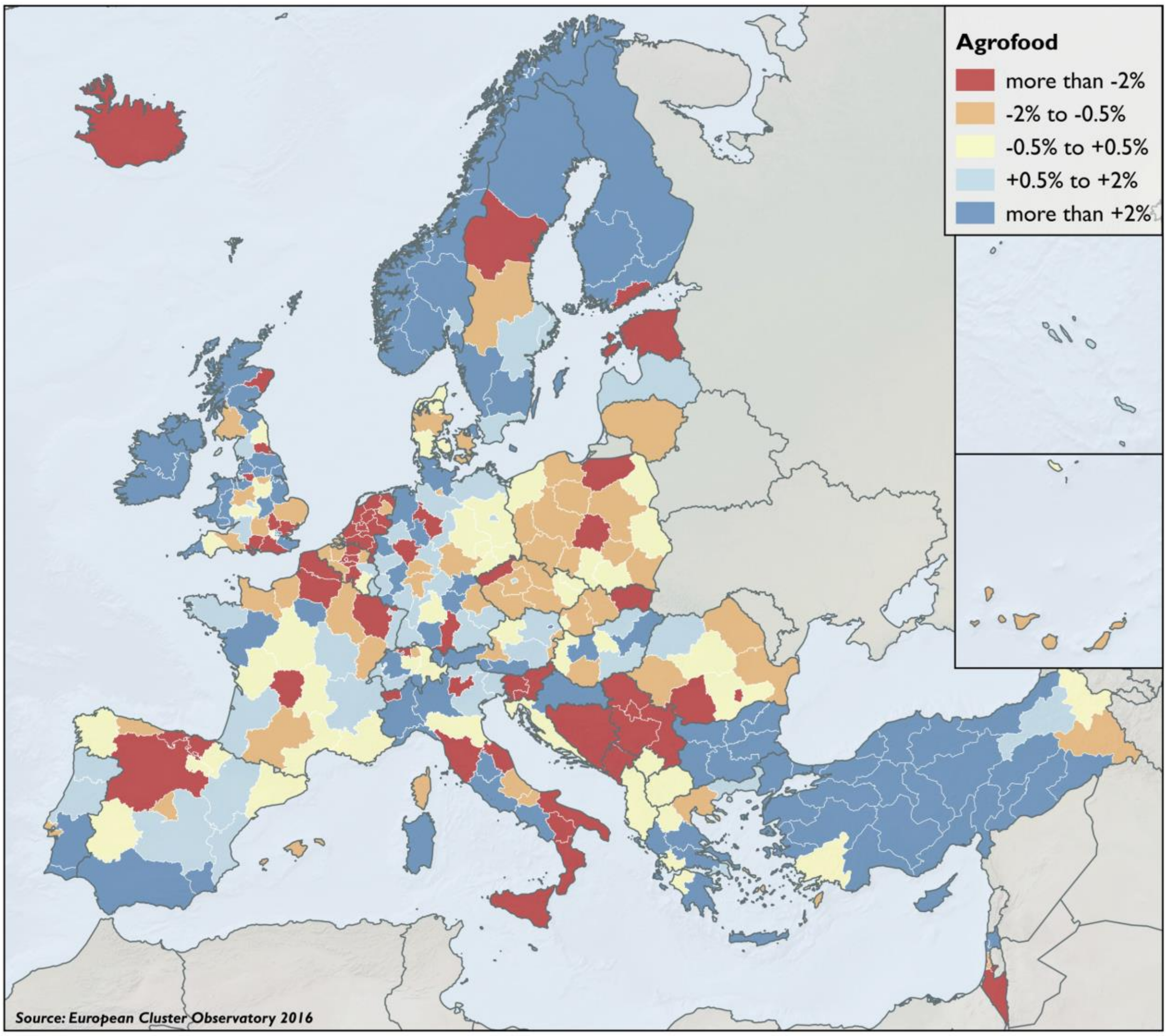
5. Evolution

Figure 3: Employment over time, 1996-2014 (2008=100)



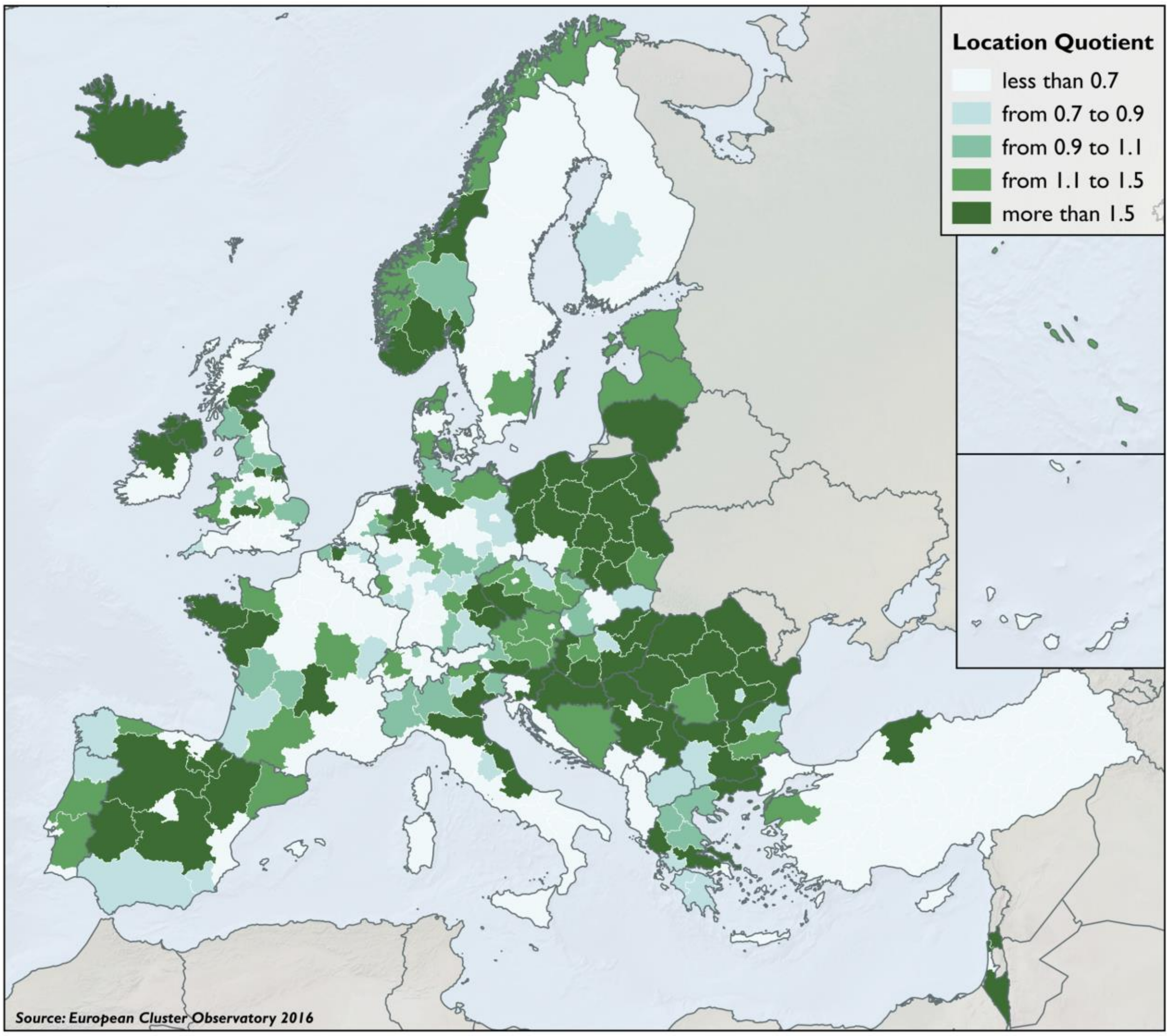
Note that there is a break in time series in 2008: all data prior to this date was sourced from the dataset in prior version of the European Cluster Observatory and adjusted to be compatible with the current dataset.

Figure 4: Annual Growth in Agrofood (2008-14)



6. Sub-cluster Profile: Livestock Processing

Figure 5: Regions most specialised in Livestock Processing



7. Selected Cluster Initiatives in Agrofood

Advanced cluster policies conducive to successfully implement regional innovation strategies do not only provide funding to cluster initiatives or cluster organisations but rather offer a broad set of policy choices to support the entire framework conditions of the actors in given regions. Such a policy approach aims to improve cluster-specific business environments that provide optimal conditions for companies in related industries to raise their productivity and innovation. Creating platforms for collective action within clusters through cluster organisations can help companies from different sectors to innovate better and exploit their business opportunities. Cluster organisations can in turn also be a major partner for the government to design and implement effective policies for upgrading cluster-specific business environments. However, strong cluster organisations are necessary, managing their cluster in an excellent manner and being able not only to take up but to proactively influence the regional social and economic development, fully integrated in all relevant communities, the policy making, the industrial, the academic, and other relevant ones.

Being awarded with a quality label of the European Cluster Excellence Initiative is a justification for strengths. In the following sector-related cluster initiatives are listed where the cluster organisation is holding such a label. Furthermore, two of the GOLD-labelled cluster initiatives are shortly described to give an idea of their set-up and interesting activities and their effects.

Cluster Management Excellence Label GOLD – Proven for Cluster Excellence

Name	Country	www
AGRI SUD-OUEST INNOVATION	France	http://www.agrisudouest.com
Cluster de la Acuicultura de Galicia	Spain	http://www.cetga.org
Flanders' Food	Belgium	http://www.flandersfood.com/
INOVCLUSTER	Portugal	http://www.inovcluster.pt/
Lebensmittel Cluster Niederösterreich (ecoplus. Niederösterreichs Wirtschafts-agentur GmbH)	Austria	http://www.ecoplus.at/de/ecoplus/cluster-niederoesterreich/lebensmittel
PORTUGALFOODS	Portugal	http://www.portugalfoods.org
VEGEPOLYS	France	http://www.vegepolys.eu/
VITAGORA	France	http://www.vitagora.com

Cluster Management Excellence Label SILVER – Dedicated to Cluster Excellence

Name	Country	www
AgroTransilvania Cluster	Romania	http://www.agrocluster.ro
Food-Processing Initiative e. V.	Germany	http://www.foodprocessing.de/
FoodNetwork	Denmark	http://www.foodnetwork.dk/
foodRegio	Germany	http://www.foodregio.de/
IND-AGRO-POL	Romania	http://www.inma.ro/indagropol

PortugalFoods – Cluster of the Portuguese agrofood sector

Website	www.portugalfoods.org
Established	2008
Cluster participants (2015)	Industry 84, R&D 11, Others 3
Region	Entire Portugal with a concentration in Norte and Centro
Cluster Manager	Amândio Santos

PortugalFoods is the "umbrella" brand of the Portuguese agrofood sector promoting Portugal, its products, brands and companies suited to international markets.

The mission of PortugalFoods is to reinforce the competitiveness of the agrofood companies of the sector by increasing their technological capabilities, promoting production, transfer, and applications. This is addressed by promoting their internationalisation. This is done by increasing knowledge regarding innovation of the stakeholders of the sector and by increasing their capacity for internationalisation and for identifying and capturing new opportunities.

The PortugalFoods action plan is based on two strategic pillars: innovation/knowledge and market/internationalisation.

Within these two domains “market” (the “historic” and well matured domain) and the rather “new” domain “knowledge” (implemented since 2013) a variety of activities is carried out, being defined as “projects”; participation of the cluster members in these projects is clearly defined. Besides receiving funding for each of such projects, the participants of the project have to finance a certain share from own resources and additionally have to finance a share as well to the cluster organisation for their efforts in managing and facilitating the projects. This model of working in a flexible manner allows an increase of activities, if demanded, as each of these projects can be considered as self-sustainable. Over the years, several activities have led to significant impacts on the participant’s side as well as on the regional economic level in general.

In the following, a success story related to the domain “market” is described: In 2013 and 2014 PortugalFoods organised promotion actions “sabor de Portugal” (taste of Portugal) by partnering with a big retailer / shopping centre in Andorra. In 2013 20 cluster participants were selected to represent and sell their food products in a very successful one-month promotion sale in Andorra. The action was repeated in 2014 with more companies. These actions have led to a sustainable demand for the promoted Portuguese goods in Andorra. As a result the majority of the involved Portuguese companies now are regular suppliers, their products are part of the regular range of offered products in Andorra. A new market was successfully developed. The successful approach currently is replicated in Shanghai.

Flanders' FOOD – platform for the facilitation of innovation in the agri-food industry

Website	www.flandersfood.com
Established	2005
Cluster participants (2015)	Industry 343, R&D 39, Others 23
Region	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest, Belgium
Cluster Manager	Inge Arents

Flanders' FOOD is a strategy-driven cluster for the facilitation of innovation, thereby contributing to a more competitive, innovative and sustainable agri-food industry. Flanders' FOOD levers the innovation capacity of the agri-food companies by enhancing their scientific and technological knowledge by means of an integrated approach of knowledge creation, knowledge dissemination and partner matching. In this way Flanders' FOOD also contributes to the economic and social development of Flanders. Flanders' FOOD will broaden its scope in which it has operated for the past 10 years. Collaboration will become more important than ever. It will put effort into collaboration across the value chain, cross-border and cross-sectoral.

Flanders' FOOD stimulates innovation in Flemish food companies and their broad ecosystem of suppliers (raw materials, ingredients, ancillary materials, technology providers, logistics, transport, distribution, etc.). This is the primary target group. The secondary target group are food companies in the neighboring countries (Wallonia, Netherlands, France, United Kingdom, Luxemburg, Germany) and their direct suppliers (raw materials, ingredients, ancillary materials, technology providers, logistics/transport/distribution). Finally, producers and distributors of food supplements, direct customers of the food industry (food services, retail), producers of animal feed, and consumers are addressed as well.

The approach of Flanders' FOOD in R&D projects is quite unique and has proven to pay off. It demonstrates to be effective and raises the interest of companies, to engage in further research and to create a favorable environment for industry-academia collaborations and opportunities for technology transfer.

With the project "Towards Digital Food Factories" for example, companies from the food industry are supported to improve their production, quality and innovation processes through the introduction of software systems. Another example is the i-FAST project. i-FAST stands for "in-factory food analytical systems and technologies". This project focuses on the provision of innovative, fast, and user-friendly technologies and analysis methods for the food industry. The aim is to enable the companies to implement more and better analysis tools to improve the product quality, product development and process monitoring.

Overall Flanders' FOOD focuses on an ecosystem approach where all the relevant stakeholders in the agri-food ecosystem are involved in the research and industrial implementation. Flanders' FOOD facilitates interaction and brings parties together, being convinced that collaboration is one of the main keys to success.

Appendix: Industry Definition

Industry Code	Industry Name
01.11	Growing of cereals (except rice), leguminous crops and oil seeds
01.12	Growing of rice
01.13	Growing of vegetables and melons, roots and tubers
01.14	Growing of sugar cane
01.16	Growing of fibre crops
01.19	Growing of other non-perennial crops
01.21	Growing of grapes
01.22	Growing of tropical and subtropical fruits
01.23	Growing of citrus fruits
01.24	Growing of pome fruits and stone fruits
01.25	Growing of other tree and bush fruits and nuts
01.26	Growing of oleaginous fruits
01.27	Growing of beverage crops
01.28	Growing of spices, aromatic, drug and pharmaceutical crops
01.29	Growing of other perennial crops
01.30	Plant propagation
01.41	Raising of dairy cattle
01.42	Raising of other cattle and buffaloes
01.45	Raising of sheep and goats
01.46	Raising of swine/pigs
01.47	Raising of poultry
01.50	Mixed farming
01.61	Support activities for crop production
01.62	Support activities for animal production
01.63	Post-harvest crop activities
01.64	Seed processing for propagation
03.11	Marine fishing
03.12	Freshwater fishing
03.21	Marine aquaculture
03.22	Freshwater aquaculture
10.11	Processing and preserving of meat
10.12	Processing and preserving of poultry meat
10.13	Production of meat and poultry meat products
10.20	Processing and preserving of fish, crustaceans and molluscs
10.31	Processing and preserving of potatoes
10.32	Manufacture of fruit and vegetable juice
10.39	Other processing and preserving of fruit and vegetables
10.41	Manufacture of oils and fats

10.42	Manufacture of margarine and similar edible fats
10.51	Operation of dairies and cheese making
10.52	Manufacture of ice cream
10.61	Manufacture of grain mill products
10.62	Manufacture of starches and starch products
10.71	Manufacture of bread; manufacture of fresh pastry goods and cakes
10.72	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
10.73	Manufacture of macaroni, noodles, couscous and similar farinaceous products
10.81	Manufacture of sugar
10.82	Manufacture of cocoa, chocolate and sugar confectionery
10.83	Processing of tea and coffee
10.84	Manufacture of condiments and seasonings
10.85	Manufacture of prepared meals and dishes
10.86	Manufacture of homogenised food preparations and dietetic food
10.89	Manufacture of other food products n.e.c.
10.91	Manufacture of prepared feeds for farm animals
10.92	Manufacture of prepared pet foods
11.01	Distilling, rectifying and blending of spirits
11.02	Manufacture of wine from grape
11.03	Manufacture of cider and other fruit wines
11.04	Manufacture of other non-distilled fermented beverages
11.05	Manufacture of beer
11.06	Manufacture of malt
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters

For further information, please consult the European Cluster Observatory Website:

http://ec.europa.eu/growth/smes/cluster/observatory/

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