



# SYNTHESIS REPORT ENGINES FOR CHANGE

Responsible Partner: CRPA

December 2017

## *COLOPHON*

*Authors: Kees de Roest, Andrea Porcelluzzi, Research Centre for Animal Production (CRPA),  
Reggio Emilia, Italy*

*This document reflects only the authors' views and the program authorities are not liable for any use that may be made of the information contained therein.*

# CONTENTS

1. OVERVIEW AGRO-FOOD SECTOR .....	5
1.1. Agri-food market .....	5
1.1.1. General description .....	5
1.1.2. Labour productivity in agriculture and the food industry .....	7
1.1.3. Internationalization .....	8
1.1.4. Main food productions .....	8
1.2. Innovation ecosystem .....	9
1.2.1. Regional innovation trend .....	9
1.2.2. Education of farm managers .....	11
1.3. Conclusions .....	12
2. ENGINES FOR CHANGE ANALYSIS .....	13
2.1 Description of the targeted policy instrument .....	13
2.1.1. Emilia-Romagna .....	13
2.1.2. Central Denmark .....	14
2.1.3. Alsace .....	15
2.1.4. Castilla y León .....	16
2.1.5. Northern Great Plain (Debrecen) .....	17
2.1.6. Central Region (Alba Iulia, Covasna, Brasov, Harghita, Sibiu, Mures) .....	18
2.1.7. North Brabant .....	20
2.2 Engines for change matrix .....	22
2.3 Identification of learning needs .....	26
3. STRING GOOD PRACTICES .....	31
3.1. Emilia-Romagna .....	31
3.2. Central Denmark .....	32

3.3.	Alsace.....	34
3.4.	Castilla y Leòn.....	36
3.5.	Northern Plain (Debrecen).....	37
3.6.	Central Region (Covasna).....	39
3.7.	North Brabant.....	41

# 1. OVERVIEW AGRO-FOOD SECTOR

## 1.1. Agri-food market

### *1.1.1. General description*

The overall income of the regions participating in STRING shows significant differences. The highest GDP per inhabitant is registered in North-Brabant and in Central Denmark with more than 40 thousand € pro capita. Intermediate levels of income are achieved in Emilia-Romagna, Alsace and Castilla y León and low income levels can be encountered in the two Eastern European countries: the Northern Plain in Hungary and the Central Region of Romania.

Agriculture is contributing to a very small extent to GDP in almost all seven regions, oscillating between 0.6% in Hungary up to 3.7% in Castilla y León. The share of agriculture in employment is higher in almost all regions. As a consequence, the average income in agriculture is lower than in the rest of the regional economy. In North-Brabant and in Emilia-Romagna the percentage share of agriculture in employment and in GDP is very similar, which indicates that in these two regions agriculture is able to achieve almost a parity income level with other economic sectors in the region. In Central Denmark, Castilla y León and the Northern Plain in Hungary the income levels are definitely lagging behind the level of income attained in the rest of the regional economy, as there the percentage share in employment of agriculture is significantly higher than its share in GDP.

The share of the production of food & beverages in the regional GDP in most regions does not differ much from the share of agriculture in GDP. Of course, when up and downstream sectors related to food & beverages would have been taken into account, their share would certainly exceed 10% and in some regions come close to 20%. Unfortunately, there are no comparable statistics about the weight in GDP or employment of the entire supply chain of food & beverages in the regional economy, basically because there is no common agreement about which upstream and downstream sectors to include or exclude from such calculations.

As the average income levels of the food & beverages industry are concerned the following results can be recorded. In North-Brabant, Emilia-Romagna, Castilla y León and Alsace the incomes gained in the food industry are higher than in other sectors of the regional economy. In Central Denmark and in the two Eastern European regions the food & beverages industry has significantly lower levels of income compared to the incomes achieved in other sector of the regional economy.

Table 1 - Main Indicators

INDICATOR	UNIT	NORTH- BRABANT	EMILIA- ROMAGNA	CENTRAL DENMARK	CASTILLA Y LEON	ALSACE	NORTHERN PLAIN	CENTRAL REGION
GDP per inhabitant	€	43,058	33,562	42,900	22,649	29,843	6,967	14,200
% of agriculture in GDP	%	1.9	2.6	1.7	3,7	1.8	0.6	2,8
% of agriculture in employment	%	2.2	2.8	3.5	7.2	0.9	4.8	2,1
% of food & beverages production in GDP	%	2.1	3.0	1.4	7.2	4.2	1.9	2.3
% of food & beverages production in employment	%	1.8	2.9	2.5	3.0	3.4	3.3	n.a.
R & D as percentage of GDP	%	2.5	1.8	2.8	1.0	1.7	1.4	0.2
Export of agri-food as % of total production	%	50.0	30.6	46.2	12.2	19.0	8.5	32.0

Significant resources to R&D are allocated in the regions of North-Brabant (2.5%) and Central Denmark (2.8%). These two regions have the highest level of economic development in terms of GDP per inhabitant and this result might be triggered by the high expenditure in R&D in these regions. Intermediate levels of R&D expenditure are found in Emilia-Romagna (1.8%) and Alsace (1.7%). Relevant is the relatively high level of allocation of financial resources to R&D in the Northern Plain of Hungary (1.4%), which is higher than in the slightly more prosperous region like Castilla y León in Spain. Very low level of R&D expenditure is to be found in the Central Region of Romania (0.2%).

North-Brabant and Central Denmark are outstanding regions in terms of agri-food export performance, reaching almost 50% of total food production. These two regions are immediately followed by Emilia-

Romagna and the Central Region in Romania, which are able to export about 30% of its agri-food production. Definitely lower levels of agri-food exports are registered by Castilla y Leòn (12%), Alsace (19%) and the Hungarian Northern Plain (8.5%).

### 1.1.2. Labour productivity in agriculture and the food industry

Labour productivity both in agriculture and in the food industry are high in North-Brabant and Central Denmark. These are the two regions with the highest incomes and the highest allocation of R&D in GDP. Certainly, a high and effective expenditure in R&D explains part of the high productivity of labour, both in agriculture and in the food & beverages industry. Slightly lower levels of labour productivity are encountered in Emilia-Romagna, Alsace and Castilla y Leòn, whereas rather low levels of the productivity of labour are reached in the two Eastern European regions.

Significant is that in all seven regions, except for the Northern Plain in Hungary, labour productivity is higher in the food industry than in agriculture. Probably this is due to the opportunity to invest in more labour saving technology in food processing than in the production of agricultural raw materials.

Table 2 – Labour productivity

INDICATORS	GDP per employee in agriculture	GDP per employee in food industry
NORTH BRABANT	74,000	95,652
EMILIA-ROMAGNA	60,018	66,774
CENTRAL DENMARK	n.a.	130,540
CASTILLA Y LEON	25.324	62.400
ALSACE	29,144	74,739
NORTHERN PLAIN	19,972	14,741
CENTRAL REGION	3,250	7,868

### 1.1.3. Internationalization

Net exporting regions of agri-food products are North-Brabant and Central Denmark. As might have been expected the majority (around 70%) of imports and exports concerns exchange with EU Member States. Emilia-Romagna ranks third in terms of agri-food exports, but is also importing large quantities of agricultural raw materials, food and beverages. This region is strong in processing imported raw material and exporting high value-added food products. Examples are high quality cured hams, pasta and processed tomatoes. Although being next exporting regions, of minor importance is the entity of the agri-food exports of Castilla y Leon and Alsace. Finally, of interest is the next export position of the Central Region of Romania with a positive trade balance of trade of 1 billion €.

Table 3 Imports and exports of agri-food products

	NORTH- BRABANT	EMILIA- ROMAGNA	CENTRAL DENMARK	CASTILLA Y LEON	ALSACE	NORTHEN PLAIN	CENTRAL REGION
Import EU	7,000	3,560	3,099	982	N/A	N/A	1,500
Import extra EU	3,000	2,395	1,345	-	N/A	N/A	2,200
Total Import	10,000	5,955	4,444	982	1,682	N/A	3,700
Export EU	9,500	4,124	6,456	1.688	N/A	N/A	1,900
Export extra EU	4,500	1,812	3,312	-	N/A	N/A	2,800
Total Export	14,000	5,936	9,768	1.688	2,433	N/A	4,700
Balance of trade	4,000	-19	5,324	706	751	N/A	1,000

### 1.1.4. Main food productions

Milk processing and the production of a variety of dairy products is common to all seven regions, except for Alsace. In most regions dairy production interests fresh milk for human consumption, butter and different kinds of industrial cheeses. In Emilia-Romagna dairy production concerns for more than 90% the production of Parmigiano-Reggiano cheese, a high-quality cheese with a Protected Designation of Origin. Cereals are grown in all regions. Grain maize predominates in the Northern Plain in Hungary for the production of sweet

corn and feed grain and in the Central Region of Romania. Soft wheat and barley for the animal feed industry are the main cereal crops in Central Denmark.

Of high importance for the agri-food economy in Alsace is the production of wine grapes and its related wine industry. Wine exports is characterizing the agri-food economy of Alsace. Fresh fruits are highly important in Emilia-Romagna with pears, peaches and apricots dominating the scene and fruit juice companies and distilleries are strongly related to the local fruit production. In North-Brabant pig meat production is one of the most productive agri-food sectors of the region, with large scale pig farms and abattoirs able to export significant quantities of pork to EU and non-EU countries. Castilla y Leòn is characterized by extensive and large cereal crop areas, either for human or for the production of animal feed, used to produce significant volumes of meat.

Table 4 - Regional main food productions

NORTH-BRABANT	EMILIA-ROMAGNA	CENTRAL DENMARK	CASTILLA Y LEON	ALSACE	NORTHEN PLAIN	CENTRAL REGION
Vegetables	Dairy	Pigs	Meat	Cereals	Cereals	Meat
Pig meat	Vegetables	Dairy	Cereals	Wine grapes	Fruits	Dairy
Dairy	Fruits	Cereals	Eggs and Dairy products	Dairy	Poultry	Vegetables

Source: Eurostat, Economics accounts for agriculture, NUTS 2 regions

## 1.2. Innovation ecosystem

### 1.2.1. Regional innovation trend

The regional innovation eco-system can be described by using five selected key indicators collected for the Regional Innovation Scoreboard(RIS) of the EU<sup>1</sup>:

- Percentage population aged 30-34 having completed tertiary education;
- Employment in medium high-tech & knowledge intensive services;
- R & D expenditure in the public sector
- R & D expenditure in the business sector

---

<sup>1</sup> Regional Innovation Scoreboards are part of the European innovation Scoreboards (EIS) project, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

- EPO patent applications per billion regional GDP

As the completed tertiary education is concerned North-Brabant, Central Denmark, Castilla y León and Alsace show the best performances with percentages around or just above 40%. Significantly lower levels are found in Emilia-Romagna (28%) and the Northern Plain of Hungary (24%). In Romania the lowest level is encountered (9.3%).

Unlike intermediate education levels, the employment in high tech and knowledge intensive services in Emilia-Romagna ranks first among all seven regions (18%), followed by North-Brabant and the Northern Plain in Hungary.

The high percentage of R&D in the GDP of North-Brabant and Central Denmark have been illustrated already in the previous chapters. Of relevance here is to stress that in North-Brabant this interests for 85% private business expenditure, whereas in Central Denmark the public sector invests significant resources in R&D. This same conclusion holds for Castilla y León where public funds represent 47% of total R&D. In the Eastern European countries, the low public expenditure in R&D is to some extent compensated by a higher level of investments of private businesses, although the overall level remains rather low. Emilia-Romagna and Alsace are occupying an intermediate position between the high expending R&D regions of North Western Europe and the low funding allocated to R&D in Eastern Europe.

There is no doubt about the fact that the education level and the expenditure in R&D have a positive impact on the labour productivity in agriculture and in the food industry. The data illustrated up till now clearly show, that North-Brabant and Central Denmark achieve top performances in their economies because of their high investment in education and R&D. A further proof of their performances is the number of EPO patent applications per billion of GDP with North-Brabant reaching 18.77 and Central Denmark 11.00. All other regions are lagging behind in this classification.

Table 5 – Regional Innovation Scoreboard indicators (2016)

	NORTH- BRABANT	EMILIA- ROMAGNA	CENTRAL DENMARK	CASTILLA Y LEON	ALSACE	NORTHERN PLAIN	CENTRAL REGION
Percentage population aged 30-34 having completed tertiary education (%)	44.1	28.8	43.3	42.1	39.7	24.4	9.3
Employment medium high-tech manufacturing & knowledge intensive services (%)	15.8	18.4	14.2	9.6	14.6	15.8	10.6
R&D expenditure public sector (%)	0.39	0.58	1.32	0.47	0.68	0.34	0.20
R&D expenditure business sector (%)	2.29	1.17	1.48	0.54	1.06	0.81	0.50
% private business R & D	85%	67%	53%	53%	61%	70%	71%
EPO patent applications per billion regional GDP	18.77	4.64	11.00	0.41	4.91	0.62	5.60

Source: EU Commission, Eurostat

### 1.2.2. Education of farm managers

The level of agricultural training of farm managers is highly variable among the seven regions. Only practical experience is the basic source of knowledge of the farmers in Castilla y León, the Northern Plain in Hungary and in the Central Region of Romania. Basic training is characterizing the majority of farmers of North-Brabant and Central Denmark. An outstanding level of training is reached by the farm managers of Alsace, where more than 20% receive a full agricultural training. Emilia-Romagna is at a level in between the high educated farmers of North-Brabant and the lower level of the Spanish and Eastern European regions.

Table 6 - Agricultural training of farm managers

Farmers training (2016)	Practical experience only	basic training	Full agricultural training	Total
NORTH-BRABANT	27.5	65.7	6.8	100
EMILIA-ROMAGNA	58.4	35.5	6.1	100
CENTRAL DENMARK	49.7	43.9	6.4	100
CASTILLA Y LEON	82.2	16.2	1.6	100
ALSACE	55.7	21.7	22.6	100
NORTHERN PLAIN	81.9	14.7	3.3	100
CENTRAL REGION	95.8	3.6	0.6	100

Source: EU Commission

### 1.3. Conclusions

High education levels and significant investments in R&D are important to create high level human capital in agriculture and in the food industry able to boost innovation and competitiveness on international markets. High labour productivity can only be reached, when relevant resources are allocated to the creation of competent farmers and food industry managers. Only practical experience certainly is not sufficient to sustain innovative development pathways and create the ability to operate on extremely difficult export markets. North-Brabant and Central Denmark are outstanding examples of highly competitive regions where the high-level innovation ecosystem explains their productive and export performances. Alsace and Emilia-Romagna are following these two leading regions in a secondary position, which is largely explained by a lower level of education and minor investments in R&D. Castilla y León has moderate performances in productivity and exploitation of export potentials. Finally, among the two Eastern European regions the Northern Plain in Hungary shows lower levels of economic development, but discrete levels of tertiary education. The Central Region of Romania lags behind, because of low levels of investments in R&D, and low agricultural training level of farmers and tertiary education.

## 2. ENGINES FOR CHANGE ANALYSIS

### 2.1 Description of the targeted policy instrument

#### 2.1.1. *Emilia-Romagna*

The targeted policy instrument of Emilia-Romagna is the investment priority 1b included in the priority Axis 1 of the ERDF Regional Operational Programme “research & innovation”. The priority Axis 1 intends to strengthen the regional network for research and technology transfer to businesses. The measures supported by this axis are aimed at increasing businesses’ capacity to introduce new solutions and products, including collaboration with research partners, promoting innovation pathways in strategic areas of the regional production system, strengthening the research of the High-Tech Network, facilitating the use of innovation laboratories and centres through international openness and participation in European programmes such as Horizon 2020 and COSME, as well as supporting high-tech start-ups.

Investment priority 1b has the objective to increase businesses’ innovation activities by supporting their research projects, the acquisition of technological innovation services, the adoption of innovative process and product solutions, as well as research and development projects in collaboration with research partners (centres, universities, etc);

During the STRING project the Emilia Romagna Region is focusing its activities, in synergy with the regional managing authority of the ERDF funds, on the investment priority 1b. The investment priority 1b aims to promote investment in R & I by developing links and synergies between businesses, research and development centers and the Higher Education sector, in particular by promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networks, clusters and open innovation through smart specialization, and supporting technology and applied research, pilot actions, early validation of products, advanced manufacturing capabilities especially in key enabling technologies, and the diffusion of general purpose technologies.

This priority is structured according to three specific objectives:

1. Increase the innovation activities of the enterprise
2. Strengthening the regional and national innovation system
3. Increasing the incidence of innovative specializations

The agri-food sector is one of the regional specialization areas identified by the 3S strategy and therefore this sector is directly relevant for the targeted policy instrument. About 15% of the ERDF resources allocated to the regional specialization strategy are allocated to the agri-food sector. The indicator updated to the second semester of 2017 shows, that 20% of funds were allocated to the agri-food area under the priority 1b.

### 2.1.2. Central Denmark

The Policy Instrument "Focused Growth", addressed in STRING, covers a range of priority growth areas in Central Denmark Region. The food sector (excluding the primary sector) is a top area of intervention. The policy is partly EU-funded (primarily ERDF and ESF) and partly nationally funded. "Focused Growth" is an overall policy instrument that is being revised at the moment and the food sector will be a major part of the policy instrument. The main objectives are an increased focus on innovation, differentiation of regional products and services and raising skills level so that the Central Denmark Regional (CDR) food businesses can maintain global competitiveness and increase their contribution to the overall growth and the creation of added value. Focused Growth has been coined out in a strategy and action plan for the foodsector in CDR: *"Smart food everyday – to a world in change"*.

The main objectives of the strategy is to: *"Make Central Denmark an internationally acknowledged hotspot for innovation in the food business"*. To reach this objective Central Denmark Region will:

- Create specific initiatives, that address and challenge food enterprises related to their needs for innovation, knowledge, and competence.
- Coordinate and facilitate activities to ensure a tightly knit and operational innovation ecosystem
- Develop policies, that contributes to the development of the food cluster and create visibility to our strong positions and potentials

The action plan *"Smart food everyday – to a world in change"* aims to further develop the competencies in the food businesses to ensure they can:

- Venture into new and rising markets. The main share of Danish exports are sold to near markets with little growth. CDR will focus on markets with much higher growth rates.
- Increased focus on entrepreneurs. There is a much lower share of entrepreneurs in the food businesses and the level of education is lower than in other sectors.

The overall aim is to create more innovation active food companies by means of:

- Development of the Danish food cluster – visibility, culture of cooperation and trust, a cross regional initiative to further develop the fisheries and aquaculture businesses
- Innovation driven growth in the food sector: open innovation as a business strategy, entrepreneurs in the food industry, access to international knowledge, cooperation, capital and new business ventures
- Local development platforms. New sources of revenue, public procurement and new ways of selling to the public sector, networks that make a difference

### *2.1.3. Alsace*

The policy instrument addressed within the STRING project for the Alsace Region by ARIA Alsace is the Operational Programme ERDF Alsace 2014-2020. This operational program, which covers the NUTS area FR42 Alsace was validated by the European Commission on 11<sup>th</sup> December 2014. It is managed by the Alsace Region (now Region Grand Est following French territorial reform in 2016) in partnership with the 2 Alsatian agglomerations of Strasbourg and Mulhouse.

Because of the limited amount of EU funds, the ERDF programme is focused on a limited number of major challenges translated into 4 intervention themes, that each make up an axe of the programme:

- Research, Development and Innovation supporting strategic activity areas identified within the Alsatian S3: Smart, Specialisation Strategy (Health and well-being; Green economy) and horizontal measures to support the development of the research and innovation environment.
- Development of the digital economy, offering broadband access to enterprises, stimulating the emergence of new digital products and services by and for SME, and the development of new applications with a strong link to ITC.
- Strengthening the competitiveness of enterprises through supporting newly created or taken over companies, strengthening their financial structure, support towards internationalisation and specific targeted actions for specific sectors, generators of economic activity and growth.
- Energy transition towards a low carbon economy, supporting the emergence of new forms of energy production and stimulating energy efficiency in housing, enterprises and public buildings.

The Axe 1 “Strengthening research, technological development and innovation” of the ERDF Programme appears to be the most relevant for the STRING project. It is divided into 2 Investment priorities for the Alsace region:

1. 1a. creation and improvement of research centers that show real added value.

2. 1b. projects strengthening technology transfer and skills towards SME and SMI supported through in particular the development of new products and services.

Taking into account the above-mentioned facts, the STRING project will focus more particularly on influencing agri-food innovation within the Investment priority 1b. The investment priority 1b is defined on a European level and focuses on:

“promoting business investment in R&I, developing links and synergies between enterprises, research and development centres and higher education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation, and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies.”

The Operational Programme ERDF Alsace 2014-2020 is a small programme with a limited amount of finance for projects concerning innovation (23.8 M€). The actions of the axe 1 of the programme and the specific objectives are general and do not focus on any sector in particular. Therefore there is no particular focus on the agri-food sector. For innovation in the agrifood sector to be taken into account within this operational programme it must fit into the S3 thematic “Nutritional prevention”.

#### *2.1.4. Castilla y León*

The policy instrument addressed within the STRING project is the ERDF 2014-2020 Regional Operational Programme of Castilla y León. Beginning in 2014, RIS3 is the continuation of the two Castilla y León regional government planning initiatives dealing with science and technology. Castilla y León’s Smart Specialization Strategy integrates six programmes, and a series of specific objectives to attain are defined in each programme. Programmes develop thematic priorities to a greater or lesser extent:

- Agriculture and food industry and natural resources
- Productive efficiency in transport sectors such as automobiles manufacturing and aeronautics
- Application of knowledge and technology in health and social care, demographic change and wellbeing
- Natural heritage, cultural heritage and Spanish language
- R&D in ICT, Energy and Sustainability

The RIS3 and Operational Programme main expected results are the creation of knowledge-based jobs and growth not only in leading research and innovation (R&I) hubs but also in less developed and rural regions,

in order to build strengths, competitive advantages and potential for excellence, to support technological as well as practice-based innovation and to stimulate private sector investment, and finally, to improve the competitiveness of the region.

Castilla y León is synonymous with history, culture and nature. From mountains to plateaus, from wetlands to vast rivers, the landscape reflects the crucial role played by rural communities: the region's men and women who have worked to preserve the traditional way of life, promoting a quality food and agriculture sector. Today, Castilla y León is one of the main food producers in continental Europe. It should be pointed out that this region is the leader in the production of cereals, potatoes, beetroot, milk and lamb, and the second largest national producer in beef, cow's milk, and pork. Castilla y León is not only one of Europe's main food producers but also one of the regions with the most quality seals recognized by the European Union. In response to the demands of small and medium-sized food producers, the regional government is building a quality-focused culture in order to support small companies, competing in the global economy.

#### *2.1.5. Northern Great Plain (Debrecen)*

The Government of Hungary allocated an amount on the basis of Territorial and Settlement Development Operative Programme (TOP) from the Structural Funds of the European Union for the regional and municipal development in the 2014-2020 program year. The execution and territorial mapping are included in the Debrecen Integrated Territorial Programme (ITP) 2014-2020. From the six priorities of Integrated Territorial Programmes, the second connects directly to STRING project. Thus, the targeted policy instruments are the following priorities of ITP and TOP:

ITP 2. priority: Infrastructure development meeting the needs of internationally competitive economy, establishing a supportive environment for the operators

TOP 6.1. priority: Municipal local economy development to increase the economy and support employment expansion

TOP 6.8. priority: Employment development connecting to economy development

The objective of the local economic development is to improve the accessibility of economic areas in Debrecen. The investment makes it possible to reach many industrial and commercial areas.

The Municipality of Debrecen is planning to establish a new market to replace the existing market in Holló László promenade. The objective of the development is to improve the environment for local producers which significantly contributes to the marketing of local products. The investment to be executed advances the present state and interests of local producers, since it will be a modern facility ensuring all the needed

conditions. The market will make it possible to sell the local products at a higher rate. The development improves the operating environment of local producers and merchants.

Debrecen City encourages the starting of innovative start-up companies and the already running, but unstable companies to grow and increase their market stability by developing incubation services and creating the business infrastructure background. At present there is not any municipal building to provide incubation activities.

From the above-mentioned results and expected yields the agri-food sector will also have a wide-range share as well. Due to the infrastructural development of the companies, the production, technological organization and processing (marketing, promotion, enterprise management, quality management, knowledge management) and the infrastructure of the agri-food companies will be improved. Therefore, the productivity of the sector will be increased, so the efficiency of the companies will also rise. It contributes to the region's development by employment creation and the secondary income distribution and increases the region's and the national economy's income.

#### *2.1.6. Central Region (Alba Iulia, Covasna, Brasov, Harghita, Sibiu, Mures)*

The Regional Operational Programme (POR-ROP) 2014-2020 is managed by the POR Managing Authority of the Ministry of European Funds and was adopted by the European Commission (EC) on 23 June 2015.

The program is focusing on the following funding priorities:

1. Supporting transfer of technology and innovation take-up by SMEs in areas for smart specialisation.
2. Enhancing SMEs' competitiveness focusing on Romania's high-growth economic sectors.
3. Promoting the low-carbon economy through investments in energy efficiency in buildings, public lighting and sustainable multimodal urban mobility.
4. Supporting sustainable integrated urban development and regeneration of deprived urban areas.
5. Developing cultural heritage and tourism as drivers for local economic development.
6. Improving regional connectivity.
7. Investing in health, social, and education and training infrastructure in support of national reforms.
8. Extending the registration of land tenure.

The program's aim is to increase economic competitiveness and improve the living conditions of local and regional communities by supporting business environment, infrastructure and services for sustainable

development of the regions so that they can effectively manage resources and their potential for innovation and assimilation of technological progress.

The strategy of the ROP is to assure the highest influence on regional and local development by mobilizing resources and activating local potentials and one of the objectives is to develop regional/local urban growth poles by adopting a polycentric approach in order to increase the economic and social role of urban centers and stimulate a more balanced development of regions.

Expected results are:

- higher levels of investment in RDI, both in the public and private sectors;
- greater translation of research findings into commercial applications;
- an improved distribution of RDI activity across Romania's regions.
- improvements to public services and reduced administrative burden, both on businesses and citizens, arising from the implementation of e-government 2.0.
- sustainable growth of the Romanian economy, reflected in increased formal economic activity and employment across all of Romania's less developed regions;
- a higher proportion of employment in internationally competitive industrial and higher value-adding service sectors;
- an improved contribution to growth and employment from SMEs;
- improved environmental sustainability of the business sector.
- increased productivity and added value in agriculture, forestry and food processing sectors; reduction of polarisation in agricultural holdings (EARDF);
- increased share of farms managed by skilled young farmers.

Measure 2.1. of the ROP deals with the enhancing of the competitiveness of small and medium-sized enterprises. Unfortunately, the agricultural, the fisheries and aquaculture sectors are excluded in the new version of the ROP.

Measure 2.2 deals with expansion and diversification of regional and local infrastructure, business clusters and networks for economic cooperation. The region primarily aims to make the innovative organizations in food sector more prepared and cohesive and properly backed by innovation infrastructure. The targeted OP does not respond to this need soundly. Unfortunately, the agricultural, the fisheries and aquaculture sectors also are excluded in the new version of the ROP.

### *2.1.7. North Brabant*

The targeted policy instrument is the investment priority 1b included in the priority Axis 1 of the ERDF Regional Operational Programme 2014-2020. The regional smart specialization strategy (RIS3) is the underlying policy document that functions as an ex-ante conditionality for the operational programme. The policy is aimed at finding the industrial niches in which the region of South Netherlands can excel in a global competitive setting. These industrial niches also have to contribute to one or more of the seven societal challenges that are listed. The ones that relate to agri-food are: health, food security, sustainable agriculture, bio-economy, and resource efficiency.

The province of Noord-Brabant is one of three provinces located in the ROP program area, alongside the province of Zeeland and the province of Limburg. Noord-Brabant is the largest economy of all three provinces.

The regional smart specialization strategy aims at developing three internationally competitive industries and four industries of national importance. The agri-food industry is one of the internationally oriented clusters, alongside the high-tech systems and materials industry and the chemical industry. The clusters of national importance are bio-based economy, maintenance, logistics and Life Sciences & Health.

The participating regions have two investment priorities in which is invested:

- 1b: Promotion of research and innovation and the development of connections and synergies
- 4f: Research, innovation and use of low carbon technology

During the STRING project, the focus of the Province of Noord-Brabant will be investment priority 1b.

The main target in all 1b investment priorities are small and medium enterprises, in collaboration with other actors in the triple helix such as governments, knowledge institutions, intermediary organisations, research organizations and large firms.

The objectives vary per 'specific goal' in the operational program.

1b1: Enhancing the innovation system in cross-overs between the international and national top industries, with a large representation of Small and Medium Enterprises.

1b2: Strengthening the valorization capacity of Small and Medium Enterprises with the seven (inter)nationally oriented clusters in order to address the social challenges in the operational program.

1b3: Sustainable strengthening of the labour market where supply meets demand in the seven industries, in order to enhance the innovation capacity of the industries.

The actions that are undertaken have to contribute to:

- New collaborations between firms and knowledge institutions, within and between the industries of international importance, and the industries of national importance. First and foremost beneficial to SMEs, that are given the opportunity to tap into knowledge that is developed in research programs. The ambition is that the innovation system as a whole is strengthened.
- Strengthening the capacity of SMEs to accelerate the process of knowledge development and market introductions in the seven prioritized industries. This enables the SMEs to increase their revenues that come from new products and services.
- A better match between demand and supply on the labour market in the seven prioritized industries. Mostly aimed at technical competences that are needed in the innovative industries of South-Netherlands.

Within the RIS3 strategy and the operational program there is no specific budget allocated for the agri-food industry. Still, an advice has been given by regional development agencies, which type of agri-food projects should be prioritized.

The main priority of the agri-food industry is the connection between societal challenges such as food security, food quality, health relations between human and animals, lifestyle diseases, the quality of air/soil/water, and resource efficiency. Between these challenges, numerous cross-overs can be developed, that enable SMEs to create new products and services that can be valorized on the market.

## 2.2 Engines for change matrix

The STRING project has identified the following five common topics.

1. Promoting food-innovation eco-system frames such as open labs, test factories etc.
2. Strengthening cross-sectoral initiatives
3. Improve the position of agriculture and food innovation in regional development
4. Promotion of added value by linking innovation and production to real consumer needs
5. Tackling the cluster integration problems of SMEs

The following table contains information about how the seven regions are tackling these common topics.

Common topic	Emilia-Romagna	Central Denmark	Alsace
1. Food industry innovation ecosystem frames (open labs, technopoles etc.)	63 innovation projects, of which 16 strategic projects have been financed so far on themes related to agri-food; (16% of the total)	All initiatives in the strategy focus on creating a strong innovation ecosystem and to create innovation and growth.  This involves cooperation between facilitators, universities and public-privat organizations/TCPs, that provide labs and manufacturing facilities.	The ARIA Alsace is creating a scientific lab, open to all its members, for RD (will open in 2018) – but with ERDF support
2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors	In the action 1.1.1-.1.4 and 1.2.2 projects should be related to one or more Key Enabling Technologies	Several initiatives related to cooperation between health sector, education digitalization, High-tech and the experience driven economy	Opening of EASE (aseptic school) in 2017 – supported by the ERDF programme under the topic “Health” but open to other industrial sectors
3. Improve role of agriculture and food innovation in regional		Due to political priority of the national programs and for	

<p>development by harmonizing policy instruments</p>		<p>preventing the risk of double funding, farmers who try to develop new food products cannot get support from (the national program of) ERDF unless they start another business NOT related to farming/primary sector activities though the (national program of) EARDF does also not open up such funding.</p>	
<p>4. Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production</p>	<p>Strategic projects related to agri-food by-products.</p>	<p>Consumer- and user centered focus is a necessary precondition for innovation.  The initiatives under innovation driven growth in the food sector and Local development platforms all work within this area.</p>	<p>ARIA Alsace programme “Savourez l’Alsace” (Enjoy the taste of Alsace)</p>
<p>5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions</p>		<p>Both Danish Food Cluster, FFI and Engage Food has this as their main ambition</p>	

Common topic	Castilla y Leòn	Northern Plain (Debrecen)	Central region (Covasna)	North Brabant
1. Food industry innovation ecosystem frames (open labs, technopoles etc.)	<ul style="list-style-type: none"> <li>- Castilla y León Entrepreneurship and Innovation Network</li> <li>- R&amp;D Policies for the sector during the past 20 years</li> <li>- Clusters, associations</li> <li>RTD Infrastructures</li> <li>- ADErural: specific programme to promote the economic activity and the setting up of new companies un rural areas</li> </ul>		<p>Measure 2.1. Promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and by encouraging the creation of new businesses, including through business incubators.</p> <p>Measure 1.1. Strengthening research, technological development and innovation</p>	<p>This is a relatively new approach, but its very important in political and policy terms. We work on this mainly with our Innovation Agrifood Program. This instrument facilitates (and sometimes finances) these types of project.</p>
2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors	<p>Regional Network for Business Innovation involving ADE, 4 Universities and 10 Clusters. (<a href="http://www.redinnocyl.es">www.redinnocyl.es</a>): tools for technological and business offers and demands, with personalized assessment by ADE</p> <p>Partnerings food cluster with Health and Independent Living clusters</p> <p>Fostering the participation of actors in national and international R&amp;D and innovation projects</p>		<p>Measure 2.2. Supporting the creation and expansion of advanced production capabilities and service development</p>	<p>This is the heart of our S3 Strategy and it is one of the most important policy directions. We co finance these projects with ERDF money and in Interreg A and B programs. Next to that, it is an important part of our Innovation Agri-food program.</p>
3. Improve role of agriculture and food innovation in regional	<p>ADErural: specific programme to promote the economic activity and the</p>		<p>Measure 2.2. Supporting the creation and expansion of</p>	<p>In our policy development we combined agricultural policy and food policy</p>

<p>development by harmonizing policy instruments</p>	<p>setting up of new companies un rural areas</p>		<p>advanced production capabilities and service development</p>	<p>(the latest used to be part of the broader stimulating economy policy). We also try to harmonize instruments. This is difficult, but we are improving this every day. The instruments on EU level (CAP and ERDF) are not harmonized. Since we are using these instruments as an addition to our instruments, it is sometimes complicated.</p>
<p>4. Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production</p>	<p>Innovative products and services (Gourmet,etc.) Internationalization policy of regional products Tierra de Sabor (Land of Flavour - regional Brand/Seal). Total traceability. More than 4,000 food products produced by over 800 companies in Castilla y León. <a href="http://www.tierradesabor.es/">http://www.tierradesabor.es/</a></p>	<p>4.1. TOP-6.1.3-15-DE1 – Local economic development 4.2. TOP-6.1.3-15-SL1 - Local economic development</p>	<p>Measure 1.1. Strengthening research, technological development and innovation</p>	<p>We work on project base with several initiatives who try to work on a supply based agri-food production. We also try to stimulate the development of necessary resources (e.g. use of data in agri-food chain). As this is still on project level, there are no developed blue prints yet.</p>
<p>5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions</p>	<p>Entrepreneurship, Innovation and Self Employment Strategy of Castilla y León</p>			<p>For Brabant region this is difficult. This is mainly due to the situation that Brabant has a lot of clusters or forms of cooperation with SME's in the agrifood sector. And as a result also a lot of different regional development initiatives. And they don't always work efficient together. This is a difficult item for us.</p>

## 2.3 Identification of learning needs

Based on the experience gained in previous policy activities and a thorough investigation of the strengths and weaknesses advanced by the regional stakeholder the learning needs of each of seven regions have been identified. The learning needs are strictly related to the five common topics of the STRING project.

STRING TOPIC	Emilia-Romagna	Central Denmark
1. Food industry innovation ecosystem frames (open labs, technopoles etc.)	A comparison with other regions, in particular with the strong innovators, may support the implementation of the future strategy of the regional network.	The open labs and smaller manufacturing facilities (eg. advanced kitchens), that are available are too expensive for small start-ups to use and the incentive for the institutions to cater for these market segments isn't very strong. The existing infrastructure should involve the entrepreneurs much more in ambition setting and running the initiatives
2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors	It could be useful to know how the other regions are addressing the research on functional foods and how they are regulated.	We need to identify the means/resources to develop the cross sectorial area even more – involving companies, institutions and hospitals (eg.)
3. Improve role of agriculture and food innovation in regional development by harmonizing policy instruments	Policy instruments are separated due to the boundaries that have been set in the EU regulation, and that therefore are an external factor that cannot be influenced directly in the short term. Nonetheless, improving the cooperation between regional directorates is the primary key to address this issue.	CDR has addressed the needs for complementarity and coherence between the ESI funds to the relevant Danish ministries under the drafting process of the national programs to all the mentioned ESI funds
4. Promote added value by linking innovation and production to real consumer needs by improving the commercialization of R+D outputs and stimulate a demand driven instead of supply driven production	Understand how to tailor policy instruments and measures to encounter the emerging trends of the consumers demand (environmental sustainability, healthy foods, animal welfare, etc.)	
5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions	The level of awareness of SMEs about clusters should be assessed and their participation in it. Specific measures should be supported by accompanying activities, to promote a “cluster culture”.	We need to connect large and small companies stronger.  There is a need to better understand how we can service and help companies that aren't as agile and have a strong focus on production

STRING TOPIC	Alsace	Castilla y Leon
1. Food industry innovation ecosystem frames (open labs, technopoles etc.)	Innovation in Agrifood industry is addressed only within the S3 “Nutritional prevention” thematic.	The lack of resources and infrastructures of food companies is not only a financial matter. It is a problem of human resources capacity in order to understand the technological language as well as the opportunities R&D and innovation programs offers. In this sector, Castilla y León have a slight delay compared to other much more innovative sectors
2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors	There is no support directly targeted to cross-sectoral cooperation between the RD actors in Alsace. The Alsatian agrifood sector stakeholders are not working together enough in order to develop a common innovation strategy from farmers to consumers.	
3. Improve role of agriculture and food innovation in regional development by harmonizing policy instruments	Regional managing authorities of ERDF and EARDF are not working together enough to facilitate the emergence of structural innovation projects covering the whole agrifood sector from farmers to consumers	Despite increased domestic spending on research and development gradually in recent years, they have not yet obtained quite satisfactory results, so in this programming period it is necessary to apply lessons learned from previous periods, as well as synergies with other regional plans from another countries
4. Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production	The programme “Savourez l’Alsace” (Enjoy the taste of Alsace), aiming to promote the Alsatian agrifood products and industries among the Alsatian people, is not supported by the regional ERDF programme – not even through indirect support to ARIA Alsace, which leads the programme, although it is a consumer need (local productions / short commercialisation lines).	
5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions	There is no more support to human resources in RD for SMEs (financial support for consulting resources or for a specific RD time-limited contract).	Most of the Castilla y León companies have between 1 and 5 employees. This small dimension is a handicap to benefit from advanced technologies, access to finance or access to global markets, especially in rural areas

STRING TOPIC	Northern Plain (Debrecen)	Central Region
1. Food industry innovation ecosystem frames (open labs, technopoles etc.)		Food industry innovation ecosystem frames can be developed exclusively if the applicant is an SME. Measures are not addressed to the agri-food sector
2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors		Specific priorities are not determined in the measure. Cross sectorial comparisons are supported without selected sectors.
3. Improve role of agriculture and food innovation in regional development by harmonizing policy instruments	An improvement of the policy design and governance is needed.	
4. Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production	Lack of competences and an improvement of governance is needed.	There is a need for the improvement of the legislation. There is no priority support for the added value production SMEs. (traditional, bio-, functional, etc)
5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions		No dedicated measures for integration of SMEs in clusters and intercluster cooperation and promotion. There is a lack of cooperation practice between the stakeholders. Administrative and bureaucracy simplification is needed.



STRING TOPIC	North-Brabant
<p>1. Food industry innovation ecosystem frames (open labs, technopoles etc.)</p>	<p>Intensive livestock farming has more or less been invented in Brabant. In the period in which this happened, circularity was not yet a guiding principle. In the world now it is. A closed circular cycle at, for example, North West European level, requires many adjustments to the complete production chain. Many investments, a lot of research into adjusted forms of production. In Brabant we struggle enormously with this. How do other regions implement a more circular agrifood production?</p> <p>With our stakeholder group we discussed the need for major changes, the transition of the existing agrofood sector. A comparison with other sectors and the transition that took place there showed, that there is no major defining player (for example 1 large company) and therefore no party that can make a large investment of which a return can only be expected in fifteen to twenty-five years. Do other regions have experience with such financing?</p>
<p>2. Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors</p>	<p>Brabant, with Brainport, is recognized as an important technology region, one of the smartest regions in the world. Technology can offer many solutions for production issues and can be a potential for other forms of production. The second sector of Brabant, agri-food, is difficult to connect to the technology sector. Time and time again it appears that people are difficult to understand, working together is difficult and they can not understand the opportunities of both sectors. Learning need: whats the collaboration in other regions between the agrofood and the technology sector. Which instruments are used for this and what is the government's role in doing so.</p>
<p>3. Improve role of agriculture and food innovation in regional development by harmonizing policy instruments</p>	
<p>4. Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of</p>	<p>Brabant is very good at efficient and relatively clean agri-food production. One of the world leading regions where we invented for more than 50 years in agri and food system with one of the lowest (production) costs. This allows us to compete with the rest of the world. All actors in the system work very well for this and together. Due to new challenges this system is no longer sustainable as the only and dominant production mechanism. There is an increasing demand for different forms of qualitative production (taste, experience, animal welfare, circularity, etc.). It is very difficult to take the fundamental next steps for this other production method and other chain approach within the existing system. Learning need: how in the other STRING regions added value chains are built? Who or what are the determining players, what is the role of the government and how are changing demands / changing consumer demands brought back from the market into the chain?</p>



supply driven production	
5. Integration of SMEs in clusters and intercluster cooperation between the participating food regions	



### 3. STRING GOOD PRACTICES

Each of the seven regions of the STRING project has formulated four or five good practices, which are related to the five common topics. This chapter provides a summary of each the good practices. The good practices and the identified learning needs create the basis for the knowledge exchange activities of STRING.

#### 3.1. Emilia-Romagna

##### 1 **Regional Network of Technopoles: the CRPA LAB research unit**

**Subtopic:** Food industry innovation ecosystem

**Summary:** CRPA lab is a research unit located in Reggio Emilia and focused in agri-food innovation. It has been financed by the action I.1.1 of the ERDF Regional Operational Programme in the period 2007-2013. The action foresaw three main objectives: the realization of the infrastructure (max 70% of co-financing); the establishment of the laboratories in it, financing staff costs and equipment and the promotion of a triennial research program of the units involved (max 50% of co-financing). The agreement that lead to the creation of CRPA lab foresaw the improvement of the laboratory equipment and a 3 years research programme on themes strictly related to the needs of the local agro-industrial sector.

##### 2. **From Productive Districts to Technological Districts-2**

**Subtopic:** Integration of SMEs in clusters and intercluster cooperation between the participating food regions

**Summary:** The policy concerns interventions to strengthen the technological orientation of the productive districts of Emilia-Romagna. This policy aims to improve the efficiency of the innovative processes of enterprises in productive districts and to promote a demand for more qualified and organised research, especially by SMEs belonging to industrial districts. SMEs in general are lagging behind in investments dedicated to R&D. The circumstance that SMEs in Emilia-Romagna are often operating geographically in delimited industrial districts creates the opportunity to provide incentives to local networks of SMEs presenting collective initiatives.

##### 3. **Operational groups for innovation in the agri-food sector**

**Subtopic:** Improve the role of agriculture and food innovation in regional development by harmonizing policy instruments

**Summary:** Operational Groups are action and result oriented groups where all actors need to work together to promote innovation in the agri-food sector. The setting up of internal procedures help the OGs to operate



smoothly. Farms and processing industries participate in the OGs together with research organizations. The Operational Groups for Innovation are funded by the EARDF with projects up to a maximum amount of 300 k€ each. The projects need to deal with products that are listed in annex I referred to in Article 32 of the EU Treaty. Projects interesting innovation in the food industry that go beyond this threshold are funded by the ERDF.

#### **4. Geographical indication (GI) products: competitive advantages**

**Subtopic:** Promote added value by linking innovation and production to real consumer needs by improving the commercialization of R+D outputs and stimulate a demand driven instead of supply driven production

**Summary:** The GP aims to improve the competitiveness of the regional agriculture through the added value of quality instead of the competition on commodities costs. The target is to maintain and qualify the GI products also with the support of innovation. The GP concerns the strengthening of the quality products in order to give a central role to the GI products as representative of the global quality of the regional Agrofood system. It can be obtained with actions lead with the collaboration of the different actors and concerning:

- The identification of products with characters useful to be branded according to the EU Regulation;
- Actions aimed to stimulate the producers to associate themselves, to set up the recognition proposal and to submit the candidature to the EU;
- The assistance during the recognition procedure;
- Support the promotion of the products after the GI approval;
- Support investments for the farmers committed in the GI production.

### **3.2. Central Denmark**

#### **1. Engage Food – Local development Platforms**

**Subtopic:** Integration of SMEs in clusters and intercluster cooperation between the participating food regions

**Summary:** Engage Food is a sub-regional initiative that reaches out to small-scale, local producers – often with a high-quality production. Engage Food works in many different areas to create a network that can challenge and develop the companies further. Engage food is the CDR initiative focusing on small, local producers of high quality products. The initiative is "close" to the producers and activities are dispersed in the whole area. The focus is on developing competencies, market development, cooperation between companies and business development. Two platforms operate within the programme. One is operated by the national initiative "Food Organization of Denmark", who is behind the 30.000 visitor "Food Festival". They



do this together with business region Aarhus and a couple of municipalities. FOOD initiates and manages all activities and "buys" facilitators for the ones they themselves cannot carry out. The other is operated by Business region Mid-West. Here a range of existing entities operate in the field already. The ambition here is to facilitate cooperation between the existing entities, so they will begin to see themselves as part of a larger innovation ecosystem.

## 2. InnovationCamps

**Subtopic:** Integration of SMEs in clusters and intercluster cooperation between the participating food regions

**Summary:** Cooperation between SME's, business academies and university colleges. Innovation Camps is a way of establishing value added for education institutions, students and SME's with innovation- ideas and/or ambitions. Through facilitation SMEs and knowledge institutions clarify the key challenge related to the SME's business model and value chain. Together they decide the approach as to how students can be involved in working with the challenge, and agree on time, terms and conditions. Examples of challenges are:

- lab test of e.g. ingredients for declaration, consistency between production batches, durability, humidity, cooling, freezing characteristics etc.
- application of different production technologies
- design of production layout, packaging solutions
- sensoric tests, target groups, marketing etc.

## 3. Future Food Innovation (FFI)

**Subtopic:** Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production

**Summary:** Future Food Innovation (FFI) was initiated by Central Denmark Region with the aim to increase the number of innovative small and medium sized companies within the food industry in order to create economic growth and jobs. FFI connects companies, knowledge, funding and competencies, and has a main focus on open radical innovation and development of qualitative differentiated products. The background for this initiative was the challenge of increasing the level of innovation in the food sector. Therefore, FFI works for more cooperation between companies, and between companies and knowledge institutions. Companies within the food area are offered individual sparring and feedback regarding their innovation challenges and growth ambitions, and they are offered guidance about collaboration partners, knowledge institutions, contacts, funding, competencies etc. They can also apply to FFI for funding either for innovation



or growth projects and will be facilitated during the project. FFI is managed by a consortium of seven Danish knowledge institutions, a university and a cluster organisation. The science park, Agro Business Park, is lead partner. The project is financed by Central Denmark Region, The European Regional Fund and participating companies.

**4. Creating a public-private triple helix partnership approach** on building one coherent innovation ecosystem in Central Denmark Region (and Denmark).

**Subtopic:** Food industry innovation ecosystem frames

**Summary:** Instead of making a new actor in the existing competitive and complex ecosystem of the Danish business development agents, we promoted a new initiative instead asked for better and closer collaboration between existing agents. We in the process formed what ended up being the winning consortium responsible for the “Future Food Innovation” initiative (see the GP on the FFI initiative).

### 3.3. Alsace

#### 1. **NOVIAA**

**Subtopic:** Integration of SMEs in clusters and intercluster cooperation between the participating food regions

**Summary:** The NOVIAA programme has been developed by ARIA Alsace for its members, to foster innovation. NOVIAA is a collective training in innovation. Industries are supported for a year by one or more expert(s) to develop an innovation strategy that can be replicated afterwards. Aside this customised support, they also have the opportunity to meet other companies during conference sessions. It is a training and support programme, with a collective and an individual dimension. The approach is multi-disciplinary and appeals to thematic experts. Its purpose is to build, for and with business, a common repository of business innovation, allowing the improvement of the road map of each company participating in the programme.

#### 2. **SAVOUREZ L’ALSACE – ENJOY THE TASTE OF ALSACE**

**Subtopic:** Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production

**Summary:** The food companies of Alsace have set the goal to strengthen their competitiveness in France and overseas, in particular by valuing collectively their products with the consumers and the distributors.



The will of ARIA Alsace is to favour the promotion of Alsatian products beyond the Alsatian territory. Developed in 2013, “*Savourez l’Alsace*” is a collective trade brand made to identify quality products processed in Alsace, by Alsatian food industries and is rolled out in local agricultural food.

### 3. **Usine du future** (Factory of the future)

**Subtopic:** Improve role of agriculture and food innovation in regional development by harmonizing policy instruments

**Summary:** Faced with the changes in the economy and its environment, companies must rise to the challenge of integrating new technologies and production methods, while at the same time optimising energy resources and rethinking the place of employees within the company. This is how they can grow, conquer new markets and create jobs. In this dynamic, the Grand Est Region is launching a support measure for the deployment of the factory of the future within its territory. SMEs in the region will benefit from support (a diagnostic) to improve their performance, combining economic performance, employee well-being and respect for the environment.

### 4. **Export CCI** (Chamber of Commerce and Industry)

**Subtopic:** Promote added value by linking innovation and production to real consumer needs by improving the commercialisation of R+D outputs and stimulate a demand driven instead of supply driven production

**Summary:** From 2008, Manou HEITZMANN-MASSENEZ the chairwoman of ARIA Alsace, was convinced of the potential of Alsatian food in foreign markets, and therefore she made export her priority. As a result, she negotiated an agreement with the Chamber of Commerce and Industry (CCI) to launch a one-stop-shop for export for companies in order to make it easier for companies to sell on foreign market. Therefore an export committee was launched to implement an export programme decided by the food companies. 61% companies are exporters, what shows a real ability for export in Alsace. French products have a good image in the world, and Alsace in particular has many food products in its territory from appetizer to digestive with beer and sausages, foie gras, horseradish, pasta, chocolate and biscuits, crémant, coffee and eaux-de-vie.



### 3.4. Castilla y Leòn

#### 1. Castilla y León Entrepreneurship and Innovation Network

**Subtopic:** Food industry innovation ecosystem frames (open labs, Technopoles, etc.)

**Summary:** The Castilla y León Entrepreneurship and Innovation Network is a new way of organizing the resources of the Public Administration to stimulate and promote a more competitive regional economic model through smart specialization, relating all key actors of innovation: administrations, universities and Business-Technology Centers represented by their clusters.

#### 2. ICE Cluster Policies and Sectoral Policies

**Subtopic:** Integration of SMEs in clusters and inter cluster cooperation between the participating food regions

**Summary:** The "cluster model" of Castilla y León allows to adapt and address strategies to facilitate the strengthening and competitiveness of sectors on which to base the bet of Castilla y Leon: automotive, sustainability and energy efficiency, health sector linked to biotechnology and pharmaceutical chemical, food industry, capital goods, habitat and ICT are consolidated as blocks on sectoral policies that promote growth and competitiveness through innovation.

#### 3. Call for improving company's competitiveness through clusters support

**Subtopic:** Integration of SMEs in clusters and inter cluster cooperation between the participating food regions

**Summary:** The objective of this call is to support companies to make progress in their innovation processes. For this, the call subsidizes innovative projects (selected by competitive concurrence), led by the regional clusters, and focus on increase innovation, competitiveness, and productivity on SMEs. The call supports individual cluster projects and cooperative projects of networks of clusters. The financed projects can be classified as technical feasibility studies, innovative projects concerning product and process innovation and projects that improve the competitiveness of single production sectors.

#### 4. ADE Rural and the Regional Bioeconomy Group

**Subtopic:** Food industry ecosystem frames (open labs, technopoles, etc.)



**Summary:** The Regional Bioeconomy Group contributes to achieving the full potential of the bioeconomy by providing the knowledge base for a coherent policy framework and promoting relevant innovation activities, thereby giving specific support to markets and policies related to the bioeconomy. The group involves all regional stakeholders in the framework of the Bioeconomy: policy makers, RTDs, cluster, companies, etc. Within the Regional Bioeconomy Plan the ADE Rural Project fosters the innovation and competitiveness in the rural areas of the region, mainly focused in the agricultural and AgroFood sector.

### 3.5 Northern Plain (Debrecen)

#### **1. Innovative Food Cluster for the food innovation**

**Subtopic:** Cross-sectoral cooperation which will be able to favour cross fertilization, especially with High Tech and health sector

**Summary:** I-shop is a new system of Pharmapolis Innovative Food Industry Cluster, specialized in functional food products, focusing on items developed at the University of Debrecen and has as target group the “population” of the University. Besides virtual, the Shop also has a nice physical place, which is located at the university campus, and also some mobile applications for mongering at different events. The Cluster’s aim with this shop is testing of new food products with clinically proved, positive effects and their marketing on a certain target audience. From the aspect of granted projects, I-shop services are worth an outstanding value because they make it possible to show the positive and negative features of a development and in some cases the project itself among real market circumstances. I-shop has a great role in media communication of functional food consumption and the University’s role in this campaign. The customers of I-shop are also a potential group for new clinical tests of functional food products. This unique system with its above-mentioned advantages strengthens the determining position of the University of Debrecen in the Cluster.

#### **2. Innovative Generation Training program** for supporting the new startups and small business creation

**Subtopic:** Cross-sectoral cooperation able to favour cross fertilization especially with High Tech and Health Sectors

**Summary:** The IGEN Debrecen is a practice-oriented, 12-week innovator and startup training. The participants can master the entrepreneurial habit, working in a team, where the goal is to implement an idea together. By the end of the training, the participant will be able to instantly and easily develop an idea into a



start-up project. Out of the 26 projects of 5 training programs, 15 projects are still active. Each participant of the training will also be a member of the IGEN Debrecen alumni, that organize meetups, together with previous participants, on a quarterly basis.

### **3. Food industry roundtable-discussion**

**Summary:** Firm managers have fear for loans, for tenders and for asking help. Therefore, the firms cannot or do not want to cooperate with each other. Many managers can see only competitors. EDC Debrecen's goal is to assist managers around a table. Managers have the same problems, but they are not aware of it. They gather these problems, because EDC Debrecen shows these problems to the municipality through these meetings. The other problem is that the managers do not know how they can communicate and how their firm can be familiar with other firms. The companies have not obtained the possibility to discuss their problems in the last years. The municipality is however curious and open-minded in this topic. The municipality wants to support the companies, because they want to create a sustainable place for firms. The internal key elements are the same problems and the same solutions, which the managers can solve or find together. The managers of food industry companies know the specifications of industry. The external key elements are EDC Debrecen and municipality of Debrecen as supporting partners. EDC Debrecen offers the professional, business knowledge and connection network. The municipality evaluates the business situation. They can make decision about taxes and preference of firms, which means advantages for the companies.

### **4. Derecskei Gyümölcsös (Derecske Orchard)**

**Subtopic:** Food industry innovation ecosystem frames (open labs, technopoles etc.)

**Summary:** Derecske Orchard is operated by Bold Agro Ltd. as a family farm for over 25 years, applying Responsible Gardening methods for years to produce fruits and vegetables. Their aim is to grow good quality fruit using the most modern technologies and applying the available best varieties. In the last years the company has started to expand its activity by applying diversification. The produced fruit and vegetables are marketed without processing them and as juices. The orchard, where the production is carried out, gives the possibility of getting to know the flora and the fauna for the children and families. Groups from *kindergardens* and schools can visit the orchard within the framework of the Orchard Pedagogy Program and the families for the Adventures of the orchard. In order to support the local producers they opened the 'Almavirág Étterem' (Apple flower Restaurant) where they serve traditional meals in a modern environment by using



the short supply chain. The developments provide workplaces for the local people and the different activities operate by supporting each other.

### 3.6. Central Region (Covasna)

**1. Europe first gluten-free fibres enriched natural mineral water** developed by cooperation.

**Subtopic:** Cross-sectoral Cooperation

**Summary:** Europe first gluten-free fibres enriched natural mineral water was developed by the cooperation of SC Wega Invest SRL and IBA - National Institute of Research and Development for Food Bioresources. Both are members of the Agrofood Regional Cluster. The product is a combination of chicory roots with mineral water from Valcele, rich in minerals, recommended for people suffering from gluten intolerance, as well as for those who adopted a healthy lifestyle, pointing out that the mineral water with fibres helps lower triglycerides, cholesterol, blood sugar level and speeds up intestinal transit. The R&D project, which connects the agrifood sector with healthcare, was financed by the ERDF Funds. The total cost of the activities was 12,000 Euro with 10% cofinance rate and the activities consisted of research and product development activities. The company applied for an international patent, but after more than 3 years the process is still staging in national level.

**2. High protein level drink** for the sportsman as a solution for milk waste in the dairy industry

**Subtopic:** Cross-sectoral Cooperation

**Summary:** High protein level drink was developed from the dairy waste by the cooperation of SC Meotis SRL and IBA - National Institute of Research and Development for Food Bioresources, both members of the Agrofood Regional Cluster. The new product is a perfect combination of the whey protein mixture which can be used by athletic persons, sportsmans and also in the whole fitness industry, but also solves one of the main problems of the dairy industry, the whey waste. The R&D project, which connects the agrifood sector with fitness and healthcare, was financed by the ERDF Funds. The total cost of the activities was 12,000 Euro with 10% cofinance rate and the activities consisted of research and product development activities. The company started selling the products in special magazines, but for the development of the biggest production line future funds are needed.



### 3. Formation of the Transylvania Cluster Consortium in the Central Region of Romania

**Subtopic:** Cross-sectorial Cooperation

**Summary:** Based on the idea of the Mr. Vajda Lajos, vice president of the Romanian Cluster Association, the founder of the ASIMCOV, of Business Incubator House from Sf-Gheorghe and of several clusters from the region, including the Agrofood Regional Cluster, the Regional Transylvania Cluster Consortium was formed. The members of the consortium are from different sectors including the agri-food, textile, mechanical, wood, ICT, aerospace, energy, balneology, etc sectors. Total 23 cluster organizations and the Regional Development Agency – ADR Centru signed a cooperation agreement for the improvement of the clusterisation process in the region, based on the regions potentials, but also in the country. The Smart Specialisation Strategy development is one of the main focus areas of the consortium, where the partners can influence the development of the regional documents. The development of the consortium was a private initiative without funds. As a result of the Good Practice, even the State President visited our city to get familiarized with the needs of the clusterisation.

### 4. Healthy Vibes – new mentality

**Subtopic:** Innovation - Health

**Summary:** The Healthy Vibes system was established for the development of a new mentality about the healthy lifestyle, sport and nutrition in the region, including several activities and involving many mentors from the region to have a bigger impact, involving more than 25 athletes, mentors, doctors and trainers to develop a huge and reliable system. It is a complex organization which started to develop regional researches, strategies, organizing conferences, camps, seminars and promotional events, but also developed a long-term lifestyle changing program, paying attention to sport, nutrition, stress factors and diseases. The system was started as a social engagement project to help people changing their lifestyle. It was developed by the needs of the region and is developing very fast at the moment. Unfortunately, at the moment it is facing the lack of the resources, but the potential is huge. Its a very good business model, but also solve some crucial problems of the public health sector.



### 3.7. North Brabant

#### 1. Innovation program Agri-food

**Subtopic:** Cross-sectoral Cooperation

**Summary:** The Innovation Program Agri-food (IP Agri-food) is an economic instrument to stimulate innovation in the agri-food chain in Brabant region. The IP finances business developers who can help a (potential) project from idea to realization. The business developers work at regional innovation agencies. The IP can also co-finance certain projects or partially co-finance ERDF projects. The IP stimulates agri-food entrepreneurs to collaborate together, which is mandatory for support, and facilitates network opportunities. The IP also stimulates cross over collaboration for example between High Tech and agri-food sector

#### 2. Agri Meets Design (AGMD)

**Subtopic:** Cross-sectoral Cooperation

**Summary:** In 2013, the Agri meets Design platform was launched with the ambition to get farmers and designers to work together on social issues within our food chain. The strength of farmers and designers is that they can easily understand each other and thus redesign the chain by enlarging, reducing, but above all by innovating. In the coming years, Agri meets design will be focusing more on the added value of technology. What can robotization, the Internet of Things (IoT) e data mean for design and agriculture? Agri-Meets Design is an instrument which aims to get new innovative solutions for problems in the agri-food sector in Brabant. We make combinations of farmers with problems and try to make a match with a designer or an artist. Together they start working to better understand the issue and to discover new possible solutions. This is not technical innovation but social and or systematic innovation. With the Landbouw Innovatie Campus instrument we worked on a more fundamental level looking at the total chain and the complete scenery. With all this we are able to create new possible futures.

#### 3. Landbouw Innovatie Brabant (LIB)

**Subtopic:** Cross-sectoral Cooperation

**Summary:** Landbouw Innovatie Brabant (LIB) contributes for more than 20 years to the innovation of the farmers in the Brabant region. It is a network and it is an instrument, that co-finances innovation projects on the farm. The subsidy is mostly not very high, but often turns out to be very decisive for the innovation.



The aim of the **LIB steering group** is to work towards sustainable and vital agriculture and horticulture in the province of North Brabant, which contributes to the quality of the countryside. This must be achieved through an integrated vision of agriculture, horticulture and the countryside and through joint opinion-forming, the organisation of development forces and the carrying out of experiments and projects.

The activities of the LIB Steering Committee are deployed from 3 perspectives:

1. Launching and supporting innovative projects. To this end, the LIB Steering Committee can subsidise various projects that support the objective of the Steering Committee.
2. Organisation of thematic meetings at the interface of agriculture, rural areas, the market and society.
3. Discussing topics within the platform from a social and market perspective and establishing links between policy fields and organisations.

The “face” of the instrument is a consultant who is very approachable and has a big network. Every four years the instrument is externally evaluated, partly by professors of different universities. The evaluation is discussed in the steering board. By doing this the instrument is adapted throughout the years.