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ADVANCED MONITORING AND COORDINATION OF EU R&D POLICIES AT REGIONAL LEVEL

Targeted Analysis 2013/2/18

Regional report - OSTROBOTNIA
Annex to Final Report | Version 10/12/2012



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Regional report - OSTROBOTNIA

Contents

Synthesis of the territorial and R&D system	6
Impact evaluation.....	7
Main findings.....	7
General statement of the regional participation in the FP7	8
Headquarter effect.....	8
Rate of participation of the region in the FP 7	8
Distribution of funding at infra-regional level.....	8
Distribution of funding by participant type.....	9
Distribution of funding by participant type at infra-regional level	10
SMES' participation in FP7.....	11
Distribution of funding by programme and by theme	12
Networking: collaboration in the FP 7.....	13
Main partner countries of the region.....	13
Network of the regional collaborations in the FP7	14
Main regional actors involved in FP7 networks	15
Main actors in the region in terms of leading collaboration.....	16
Outputs – employment and patenting in the region	17
Employment	17
Patents.....	22
Annex 1 - Regional Research and technological specialisation in FP7	25
Context	25
Methodological aspects.....	25
Remarks on the specialisation indexes.....	26
Health	27
Food, Agriculture, and Biotechnology.....	28
Information and Communication Technologies.....	30
Nanosciences, Nanotechnologies, Materials and new Production Technologies.....	31
Energy.....	33
Environment (including Climate Change).....	34
Transport (Aeronautics)	36
Transport (Surface transport).....	37
ESPON 2013	4

Socio-economic sciences and Humanities.....	38
Space	40
Security.....	41
Annex 2 – FP7 participation scoreboard	43
Headquarter analysis.....	43
Regional indicators	44
Intraregional indicators	48
International cooperation	52
Annex 3 – CIP ICT participation scoreboard	54
Annex 4 – CIP IEE participation scoreboard	56
Annex 5 – ERDF participation scoreboard	56
Annex 5 – Cross thematic table.....	58

Synthesis of the territorial and R&D system

Ostrobothnia's regional GDP per capita is below the Finnish but fairly above the European mean. The region has a longstanding industrial tradition (e.g. sea technologies), hosts the biggest energy sector cluster among the Nordic countries, and has furthermore a broad range of service oriented often industry-related branches. The region focuses on the creation of a knowledge-based and environmentally friendly economy.

From its strong innovation environment many SMEs as well as numerous international companies benefit. Most RTDI competences are highly concentrated in the region's top R&D location Vaasa. Regarding RTDI indicators in comparison to the national level the region often achieves below average values. With respect to the European level, however, the region mostly obtains well above average results.

The most important sector in Ostrobothnia is the renewable energy branch that includes bio energy and wind power. Another major branch is the sea cluster. Further sectors of significance are metal industry, plastic industry, and environmental technology. Those have deep connections with the energy cluster. The renewable energy industries as well as therewith closely related suppliers are often medium-high and high-tech oriented and their knowledge is highly specialised. In addition, more service-oriented branches have been developed, including in particular industry related services such as ICT, media, industrial design, maintenance of energy production systems, and welfare services. In general, the RTDI sector in Ostrobothnia is clearly business-oriented. Companies in Ostrobothnia are predominantly SMEs but also many big international companies are located there. Especially the industry sector is shaped by large enterprises supported by clustered supply chains of often dependent SMEs. However, although SMEs are involved in R&D processes mostly large enterprises are responsible for research and innovation actions. That suggests the assumption that the regional research and innovation system is shaped by larger enterprises.

The innovativeness of Ostrobothnia's superior region Länsi-Suomi (NUTS-2 level) in relation to the other Finnish regions, measured by the number of patents applied at the EPO, ranks in the 2nd place. In addition, even in European terms the region is a strong player with respect to patenting. In 2007, the employment in R&D (FTE) was equivalent to 2.5% of the overall Finnish R&D personnel. The R&D personnel (FTE) per 1,000 employees amount to 16.7. This figure is below the national (23.3) but well above the EU-27 (11.0) average. Regarding the business orientation of both the R&D expenditures and the R&D personnel (FTE) (90.1%, >80.0%), the region's RTDI sector clearly excels the national average (81.7%, 58.4%) and the EU-27 mean (63.7%, 52.1%; in 2007) (cf. EUROSTAT 2011).

In 2009, the Ostrobothnian per capita spending on R&D was below the national average. However, there was a rise of 72% in this figure in comparison to the year 2000 and the region's R&D centre Vaasa excels both the national and European average. The region's R&D intensity accounts for 2.55%, thus, again, being far below the national average (3.9%) but well above the EU-27 average (1.85%, in 2007). The regional R&D productivity amounts to 0.26, thus being above-average compared to the Finnish standard (0.24) but slightly below the EU-27 average (0.27) (cf. EUROSTAT 2011).

Impact evaluation

Main findings

The following section analyses the research profile of the region by considering the capability to attract research funding in the Seventh Framework Program and the characteristics of the network generated by the programs. Moreover, we also consider the employment profile of the Region in the period 2004-2009, by paying particular attention to knowledge intensive and research dynamic sectors, as well as the patents produced in the region in the period 2002-2007.

As specified in the methodological section, it is not possible to assess the impact of European funding on the region. Nevertheless, programs, patenting and employment represents different and complementary stages in which research activity is developed and exploited. Thus, by using this data, it is possible to i) assess the coherence existing at the regional level among these different phases and ii) identify the most promising sectors.

Where possible, the data were collected specifically for Ostrobothnia; in other cases, data were only available at the aggregate of West Finland.

Overall, Ostrobothnia is less attractive of FP 7 funds, when compared to the national and European average, both in terms of number of projects and the amount of funds attracted. Most participations are located in Pirkanmaa area (60%). The participants are mostly Higher Education Institutions (49%), followed by Research organizations (24%) and Private for profit organizations (23%). The regional actors are particularly attractive in the theme "Nanosciences, Nanotechnologies, Materials and new Production Technologies". Most partners are located in Germany (14,5%), Finland (10,7%) and United Kingdom (10,4%). The most important organizations in the regional FP7 network are the Tampereen Yliopisto and the Jyvaskylan Yliopisto.

The region is mostly specialized in medium tech sectors, which sum up 66% of the employed, and which have grown 16 thousands units in the considered period. Although less specialized in High tech sectors than Europe and Finland, employed have grown considerably, by over 3 thousands units (+28%), mostly in Information Technology (+2'620).

The patenting activity is modest.

In sum, only in few selected themes the region appear to be particularly strong in terms of research potential, while it has a strong orientation to Information Technology.

General statement of the regional participation in the FP7

Headquarter effect

The headquarter effect analysis revealed 46 ingoing participations in the region, and 4 outgoing participations. No headquarter effect was identified for 78% of regional participations. Most of the ingoing participations were subtracted from Usimaa (35 participations).

The majority of ingoing participations came from Research Organisations (74%). All outgoing participations were linked to Private Research Organisations.

Rate of participation of the region in the FP 7

Regional actors in West Finland accounted for a total of 213 participations in FP7, 33 coordinations and 62mIn€ in EC funding (15%, 16% and 13% respectively of the national total). The weight of the region in total national FP7 funding (13%) is considerably lower than its weight in the gross domestic expenditure on R&D (23%). During the 2007 – 2011 period, West Finland received a yearly average of 12€mIn year in in FP7 funding, representing approximately 0.8% of the region's yearly R&D effort (1.6bn€ in R&D).

Overall, the rate of participation, the leadership rate¹ and the contribution received are inferior to European and Finnish averages (Table 1).

Table 1 –Participation in the FP 7: comparison with country and European average

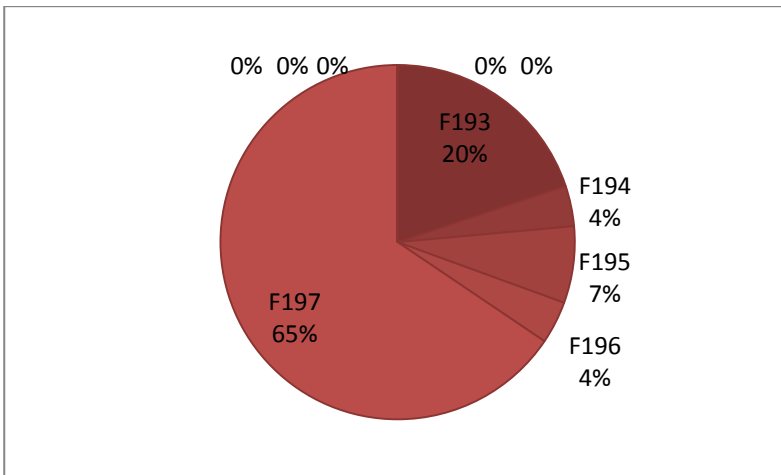
	Ostrobotnia	West Finland	Finland	Europe
leadership rate	14%	15%	14%	19%
collaborations per 100.000 population	12.22	11.83	27.26	13.95
coordinations per 100.000 population	1.67	1.83	3.87	2.59
€ contribution per inhabitant	25	33	90	44
avg funding per project	197'634	290'791	335'136	318'058

Distribution of funding at infra-regional level

The majority of regional participations and coordinations are located in Pirkanmaa (60% and 64% respectively), followed by Keski-Suomi (22% and 24%) and Pohjanmaa (10% and 9%). As seen in the following table, the infra-regional distribution of FP7 funding is roughly equal to that of participations and coordinations. Pirkanmaa accounts for 65% of FP7 funding in the region, followed by Keski Suomi (20%) and Pohjanmaa (7%).

¹ It represents an estimation of the strength of the regional actors, it is given by the ratio between the number of projects in which the regional actors play the role of coordinator and the number of projects in which the regional actors are in the position of partner.

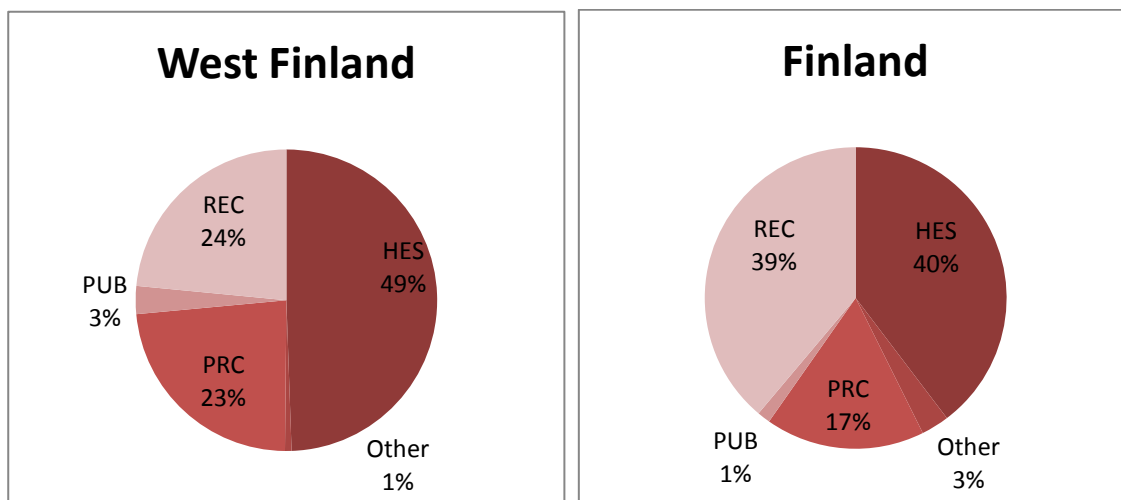
Figure 1: EC contribution distribution within the region



Distribution of funding by participant type

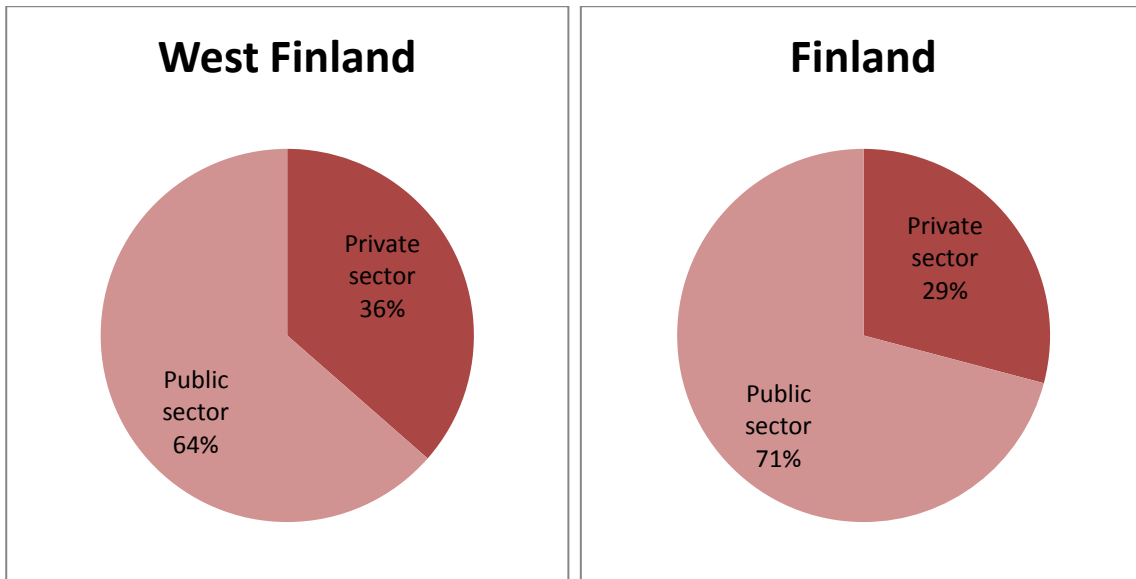
There are significant differences in the structure of participation between the regional and national level as illustrated by the following figures. The share of Higher of Secondary Education Establishments (HES) in West Finland is higher than in the rest of the country (49% vs. 40%). On the other hand, the share of Research Organisations in West Finland is lower than in Finland (24% vs. 39%).

Figure 2: Participation typology: a comparison between regional and national level



At the regional level, private organisations (commercial and non profit) account for 47% of participations, compared to 55% for public organisations (commercial and non profit). At the national level, the gap in the share between both types of organisations is higher (35% vs. 64%). The following figure presents the distribution of FP7 funding among private and public organisations.

Figure 3: Distribution of participations according to legal type: a comparison between regional and national level

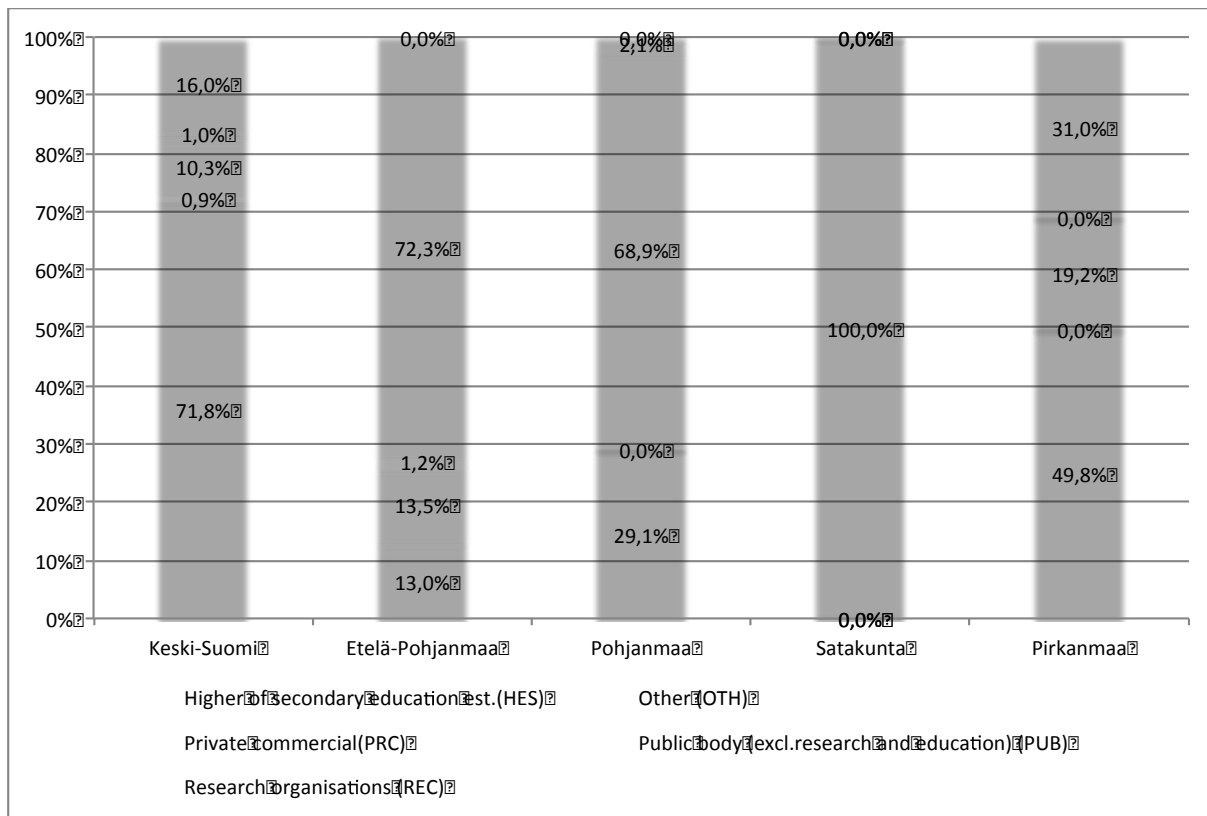


In terms of FP7 funding, Research Organisations tend to outperform other types of participants. At the regional level, this group accounted for 16% of participations, while receiving 23% of the total FP7 regional funding. Private Commercial Organisations on the other hand account for 31% of participations, while benefiting from 23% of the total regional FP7 funding.

Distribution of funding by participant type at infra-regional level

The distribution of FP7 funding by participant type at the infra-regional level varies considerably. The majority of funding in Keski-Suomi (70%) goes to Higher of Secondary Education establishments, while Private Commercial organisations are the main beneficiaries in Pohjanmaa (70%). In Pirkanmaa, Research Organisations take in 31% of FP7 funding, compared to 16% in Kesky Suomi and 0% in Pohjanmaa.

Figure 4: Distribution of FP7 funding at the infra-regional level by type of participant

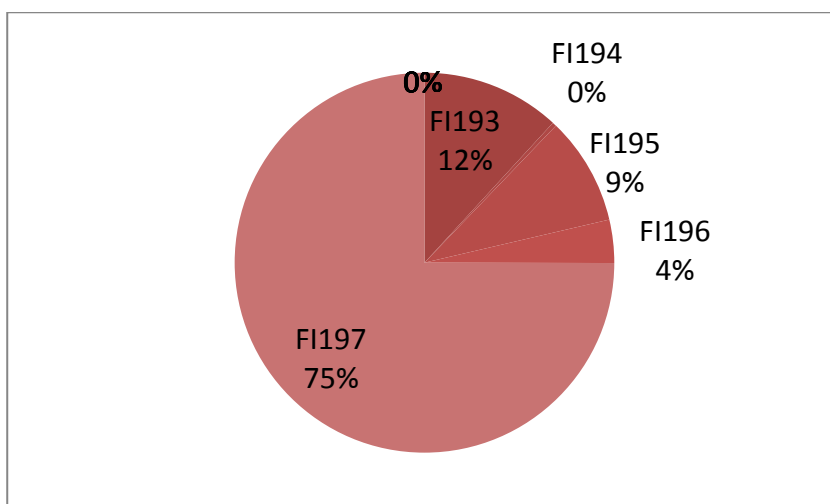


SMES' participation in FP7

During the 2007-2011 period, SMEs in West Finland accounted for 39 participations in FP7 projects and 8.7mln€ in funding (20% of the national total in both cases). This is considerably higher than the regional share of overall participations in Finland (14% of national participations and 13% of FP7 funding - see above). All SME participations were generated by private commercial SMEs (100%).

The following figure presents the infra-regional distribution of SME funding in FP7. SMEs in Pirkanmaa account for 75% of total SME funding in the region, followed by Keski-Suomi (13%) and Pohjanmaa (9%).

Figure 5: EC contribution for SMEs within the region



Distribution of funding by programme and by theme

COOPERATION programs represent the largest share of funding collected by organizations in West Finland (44.5mil) and projects (137), followed by IDEAS (6 mil, 4 projects), CAPACITIES (5 mil and 38 projects) and PEOPLE - Marie Curie actions (4 mil, 20 projects). In terms of thematic specialization within the COOPERATION program, the themes attracting more funding are *Nanosciences* (25%), *Health* (19%) and *Information and communication technologies* (17%). The relative weight of each thematic area largely reflects the amount of funding pre-allocated by the European Union to each Theme. The comparison with country and European attractiveness of funds per inhabitant provides a better insight as to the regional scientific specialization²: West Finland is less attractive than the Finnish average, nevertheless it is often more attractive than the European average, and particularly in Nanosciences, Energy, Space and, Socio-economic sciences.

A more detailed description of the thematic specialization in the FP 7 is presented in section 2.4.

Table 2 – Thematic distribution of projects and funding

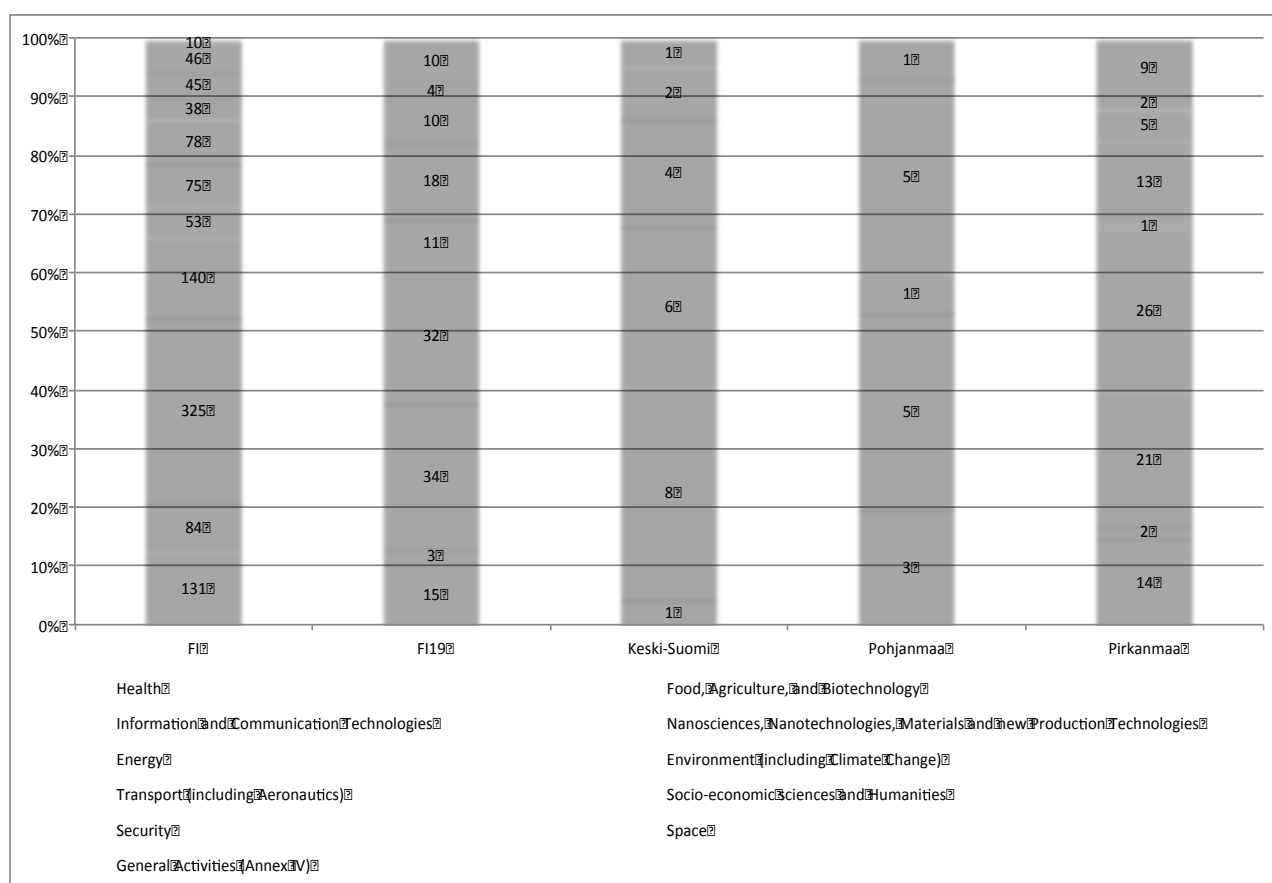
N	PROG SPEC	Theme	OSTROBOTNIA		WEST FINLAND			Attractiveness West Finland compared (contrib)	
			N	EC contrib	N	EC contribution		COUNTRY	EU
1	COOPERATION	Health			15	8'369'946	19%	0.41	0.88
2	COOPERATION	Food, Agriculture, and Biotechnology			3	733'228	2%	0.07	0.24
3	COOPERATION	Information and Communication Technologies	3	508'885	34	7'378'892	17%	0.20	0.43
4	COOPERATION	Nanosciences, Nanotechnologies, Materials and new Production Technologies	5	971'980	32	11'306'640	25%	0.61	2.04
5	COOPERATION	Energy	1	8'642	11	4'664'713	10%	0.47	1.52
6	COOPERATION	Environment (including Climate Change)					0%	0.00	0.00
7	COOPERATION	Transport (including Aeronautics)	5	1'704'310	18	5'635'066	13%	0.89	1.08
8	COOPERATION	Socio-economic sciences and Humanities	1	397'485	10	2'361'477	5%	0.49	2.37
9	COOPERATION	Security			4	472'598	1%	0.10	0.25
10	COOPERATION	Space			10	3'601'210	8%	0.91	2.47
11	COOPERATION	General Activities (Annex IV)					0%	0.00	0.00
	COOPERATION	TOTAL	15	3'591'302	137	44'523'771			
12	IDEAS	European Research Council			4	5'927'208			
13	PEOPLE	Marie-Curie Actions	2	182'588	20	4'274'568			
14	CAPACITIES	Research Infrastructures			8	1'551'487	29%	0.20	0.37
15	CAPACITIES	Research for the benefit of SMEs	1	246'070	13	1'464'175	27%	0.58	0.69
16	CAPACITIES	Regions of Knowledge	3	255'138	9	1'423'104	27%	1.12	7.21
17	CAPACITIES	Research Potential					0%	0.00	0.00
18	CAPACITIES	Science in Society	1	72'854	5	598'612	11%	0.65	1.16
19	CAPACITIES	Coherent development of research policies			2	94'483	2%	1.99	1.34
20	CAPACITIES	Activities of International Cooperation			1	224'864	4%	0.65	0.88
	CAPACITIES	TOTAL	5	574'062	38	5'356'725			

² A ratio above or below 1 points out a higher/lower attractiveness.

21	Euratom	Fusion Energy			1	76'760		
22	Euratom	Nuclear Fission and Radiation Protection			13	1'779'410		
			42	8'513'317	388	111'818'937		

The following figure presents the distribution of participations at the infra-regional level, by FP7 theme (only for COOPERATION); for the top three infra-regional territories. Keski Suomi has a significantly higher level of participations in the field of Energy and Socio-economic sciences and humanities, while Pohjanmaa displays a high level of specialisation in the Transport sub-theme when compared to the regional and national averages. The distribution of participations in Pirkanmaa is similar to that of the region and country.

Figure 6: Distribution of infra-regional participations by COOPERATION sub-theme (top three infra-regional participants)



Networking: collaboration in the FP 7

Main partner countries of the region

West Finland regional actors tend to cooperate mostly with other organizations outside the region. Partners in the region count around 8%, nationals 8%, whereas 84% are located in other European regions. The most important countries in terms of collaborations are Germany, Finland and UK; whereas if single regions are considered, the most important are Ile de France and Etelä-Suomi (Table).

Table 3 – Spatial distribution of collaborations

Partner countries	n	% of total
DE	313	14.5%

Partner Region	n	% of total
Ile de France	103	4.8%

FI	230	10.7%
UK	225	10.4%
FR	196	9.1%
ES	180	8.3%
IT	164	7.6%
SE	119	5.5%
NL	98	4.5%
BE	73	3.4%
CH	73	3.4%
PL	59	2.7%
EL	52	2.4%
AT	49	2.3%
NO	40	1.9%
DK	39	1.8%

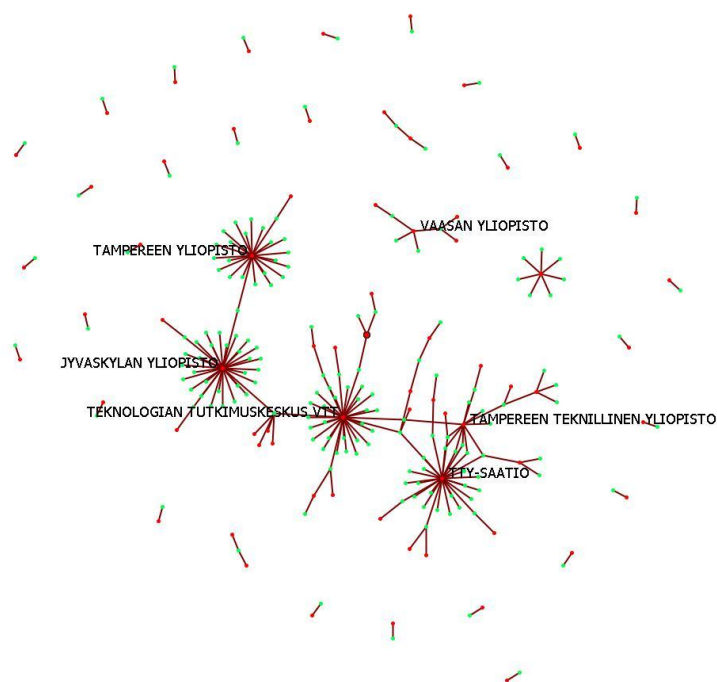
Etelä-Suomi	97	4.5%
Bayern	61	2.8%
Comunidad de Madrid	58	2.7%
Nordrhein Westfalen	56	2.6%
Baden-Württemberg	52	2.4%
Lombardia	45	2.1%
Cataluna	44	2.0%
Stockholm	42	1.9%
South East England	39	1.8%
London	34	1.6%
Attiki	32	1.5%
Zuid-Holland	29	1.3%
Vlaams Gewest	29	1.3%
Bucuresti - Ilfov	28	1.3%

Network of the regional collaborations in the FP7

Figure 1 visually represents the network of regional collaborations in the FP 7. The names of the most important actors are underlined. The network appears rather sparse, with four main actors loosely connected. This is in part comprehensible because we only consider collaboration in one type of project, but it may a hint of rather weak collaboration in basic and applied research at the regional level. The most important organizations are the TEKNOLOGIAN TUTKIMUSKESKUS VTT, TTY-SAATIO, JYVASKYLAN YLIOPISTO and TAMPEREEN YLIOPISTO. The most important actor from Ostrobothnia is VAASAN YLIOPISTO, which is involved in 4 projects.

Figure 7–FP 7 network and its main features

Meta Network



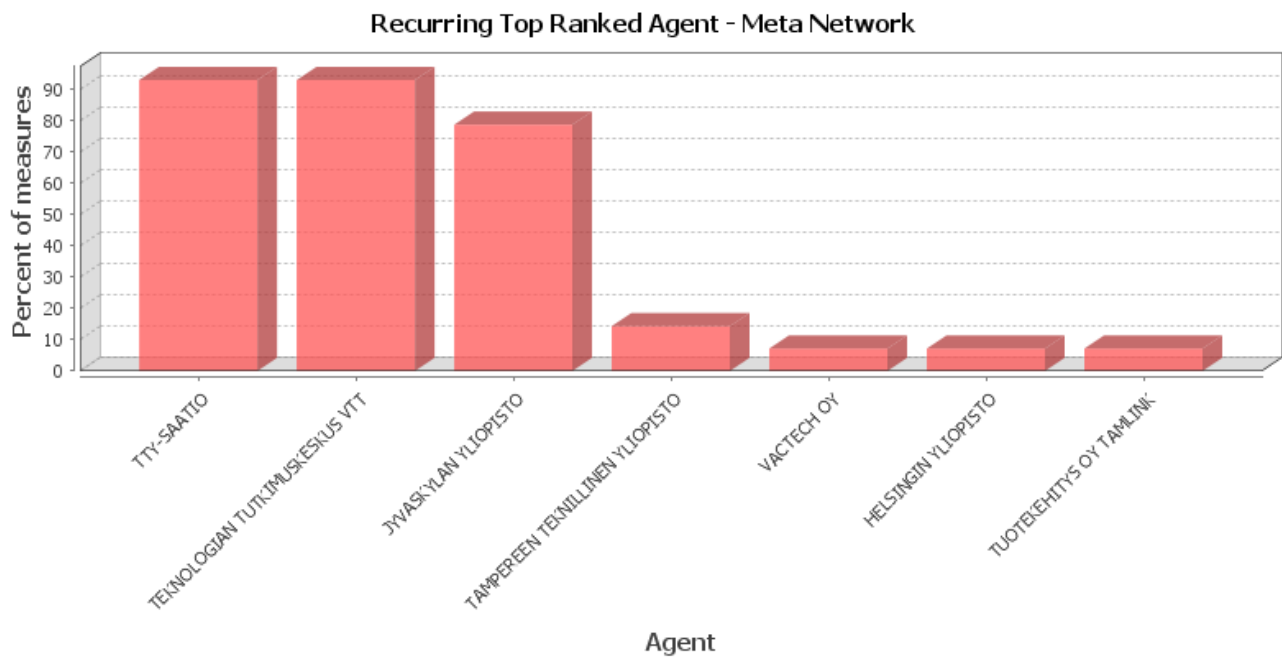
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Measure	Value
number of nodes (organizations)	69
number of edges (cooperations)	124
Density	0.051
Components of 1 node (isolates)	30
Components of 2 nodes (dyadic isolates)	2
Components of 3 or more nodes	2
Characteristic path length	2.653
Clustering coefficient	0.509
Network levels (diameter)	5
Network fragmentation	0.798
Krackhardt connectedness	0.202
Krackhardt efficiency	0.797

Main regional actors involved in FP7 networks

The next chart shows which organizations are repeatedly top-ranked in a series of centrality measures³. The value shown is the percentage of measures for which it was ranked in the top three. The following table represents three key measures to approximate the importance of the actors in the network⁴.

Figure 8 –More central organizations in the regional FP7 network



³ Total degree centrality, In-degree centrality, Out-degree centrality, Eigenvector centrality, Eigenvector centrality per component, Closeness centrality, In-Closeness centrality, Betweenness centrality, Hub centrality, Authority centrality, Information centrality, Clique membership count, Simmelian ties, Clustering coefficient.

⁴ For a definition of these measure see the methodological section.

Table 4 – Centrality measures: top actors in the FP 7

Rank	HUB centrality		Betweenness centrality		Total degree centrality	
1	TEKNOLOGIAN TUTKIMUSKESKUS VTT	1.06	TEKNOLOGIAN TUTKIMUSKESKUS VTT	312	TEKNOLOGIAN TUTKIMUSKESKUS VTT	46
2	JYVASKYLAN YLIOPISTO	0.82	TTY-SAATIO	157	TTY-SAATIO	44
3	TTY-SAATIO	0.38	JYVASKYLAN YLIOPISTO	109	JYVASKYLAN YLIOPISTO	40
4	TAMPEREEN TEKNILLINEN YLIOPISTO	0.16	TAMPEREEN TEKNILLINEN YLIOPISTO	100	TAMPEREEN YLIOPISTO	25
5	TAMPEREEN YLIOPISTO	0.08	TAMPEREEN YLIOPISTO	29	TAMPEREEN TEKNILLINEN YLIOPISTO	24
6	JYVASKYLAN AMMATTIKORKEAKOULU	0.06	METSO MINERALS OY	29	VAASAN YLIOPISTO	7
7	Benet Ltd.	0.06	MOBISOFT OY	29	POSIVA OY	7
8	Jyväskylän Innovation Ltd	0.06	TUOTEKEHITYS OY TAMLINK	8	WARTSILA FINLAND OY	6
9	Keski-Suomen liitto	0.06	MODULIGHT OY	8	METSO MINERALS OY	6
10	METSO MINERALS OY	0.05	VAASAN YLIOPISTO	2	JYVASKYLAN AMMATTIKORKEAKOULU	6

Main actors in the region in terms of leading collaboration

The three main actors in terms of leading collaboration are and in the role of partners are shown in table 5. Of course, it must be taken into consideration that FP7 program has an orientation to international collaboration; nevertheless, the data confirm the low level of regional collaboration in the FP7 compared to the overall involvement rate.

Table 5 – Top three organizations for projects led and participation as partner

focus on the top three coordinators

Type	leader	n° as leader	as partner	location of partners		
				region	country	EU
HES	TAMPEREEN YLIOPISTO	8	15	1	1	11
HES	JYVASKYLAN YLIOPISTO	6	26		3	12
REC	TEKNOLOGIAN TUTKIMUSKESKUS VTT	5	27	3	3	47

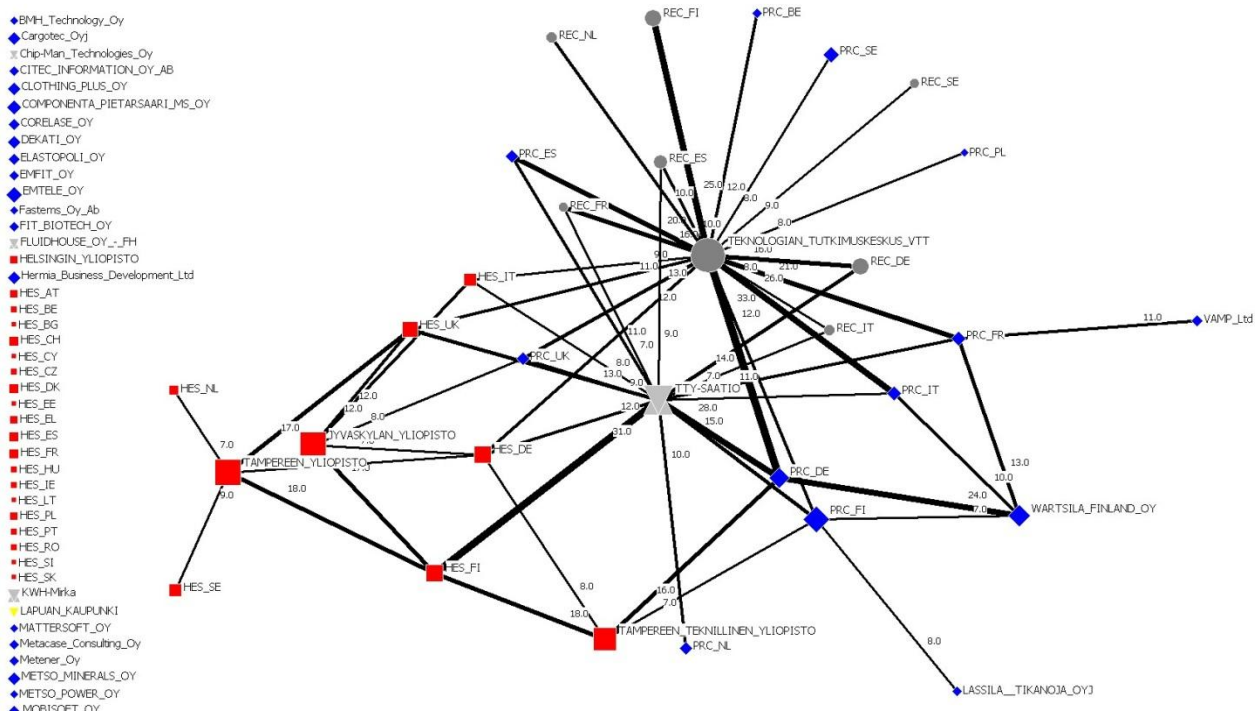
focus on the top three partners

Type	leader	n° as partner	as leader	location of leaders		
				region	country	EU
REC	TEKNOLOGIAN TUTKIMUSKESKUS VTT	27	5	2	0	25
HES	JYVASKYLAN YLIOPISTO	26	6	1	2	23
HES	TTY-SAATIO	24	4	2	2	20

The following Social Network Analysis reveals the links between the main research players in the region and their partners in Europe. European partners are not displayed individually, but have instead been regrouped by type of organisation and country of origin. The shape of the nodes indicates the type of organisation represented (circles = research organisations, squares = higher education establishments, rhombus = private commercial organisations, triangles = other). The figure only displays the most important collaboration patterns, while excluding collaborations that are too weak to be significant⁵. The

⁵ This has been determined using a minimum value of frequency of collaborations (>6).

size of the nodes indicates the importance of the player in terms of centrality (number of participations linking them to other partners); and the width of lines represents the intensity of collaboration between the partners represented in the figure.



Outputs – employment and patenting in the region

Employment

In this section we examine the distribution of employment in the region across sectors with special attention on identifying sectors where the region has a particular specialisation and/or where there are trends of growth and decline in employment. Figure 9 makes a basic breakdown of employment into sectors that can be classified as ‘high’, ‘medium’ and ‘low’ knowledge and technology intensive using the Eurostat and OECD’s classification of sectors into technology and knowledge intensive groups (see Annex 1). Further, Table 6 shows figures on employment growth and relative specialisation with respect to Finland and Europe for each of these broad groupings of sectors.

Figure 9 - Share of regional employment 2009 (west Finland)

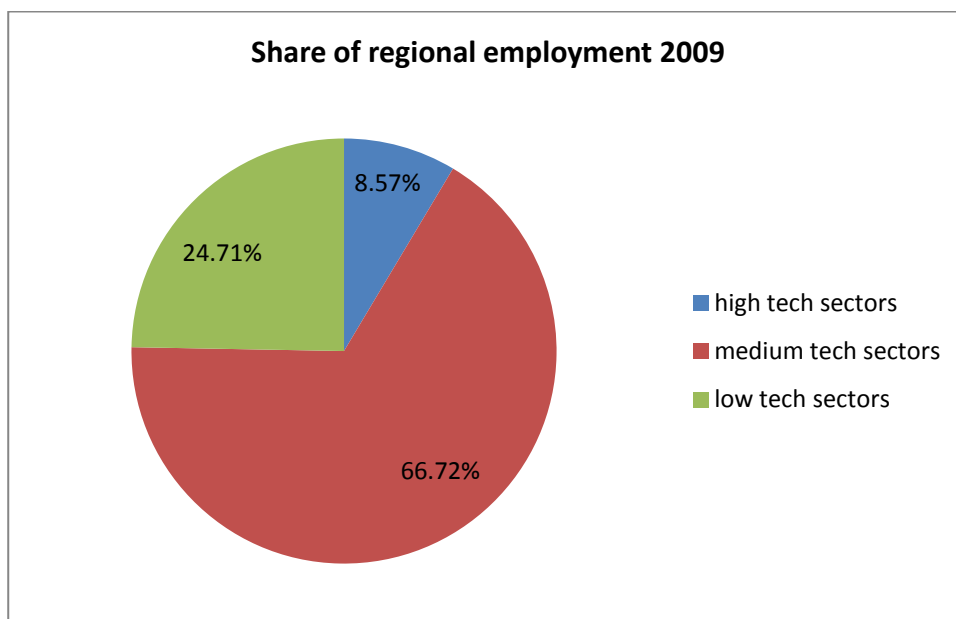


Table 6 –Employment and specialization (2009)

	Share of regional employment 2009	Variation in the share of employment 2009-2004 ⁶	Employment 2009 - 2004	Specialization with respect to Europe (2009) ⁷	Specialization with respect to Finland (2009) ⁸
high tech sectors	8.57%	27.69%	3463.00	0.52	0.70
medium tech sectors	66.72%	15.98%	17128.00	1.11	1.02
low tech sectors	24.71%	11.23%	4647.00	1.05	1.10

Employment in West Finland is dominated by medium tech sectors (67%), with low and high technology sectors accounting for 25% and 9% of employment respectively. In terms of trends, employment in low, medium and high tech sectors has grown. The specialisation figures tell the most interesting story because they show how West Finland is positioned relative to Finland and Europe. Here we see that West Finland is less specialised in high tech sectors than Europe and Finland. On the contrary, the region is relatively more specialised in medium and low tech sectors with respect to both Finland and Europe. In Table 7 this analysis is continued sector-by-sector, with sectors ranked in terms of their share of regional employment (in 2009).

⁶ The variation in the share employments has been calculated as: (n° employees in the region in 2009 – n° employees in the region in 2004)/ (n° employees in the region in the year 2004)

⁷ Specialization index with respect to Europe shows whether the region concentrates more or less employment in a certain sector(s) than the European average being 1 this average.

⁸ *Ibid* with respect to Finland

Table 7 – Employment specialization by sector and Knowledge intensity (2009)

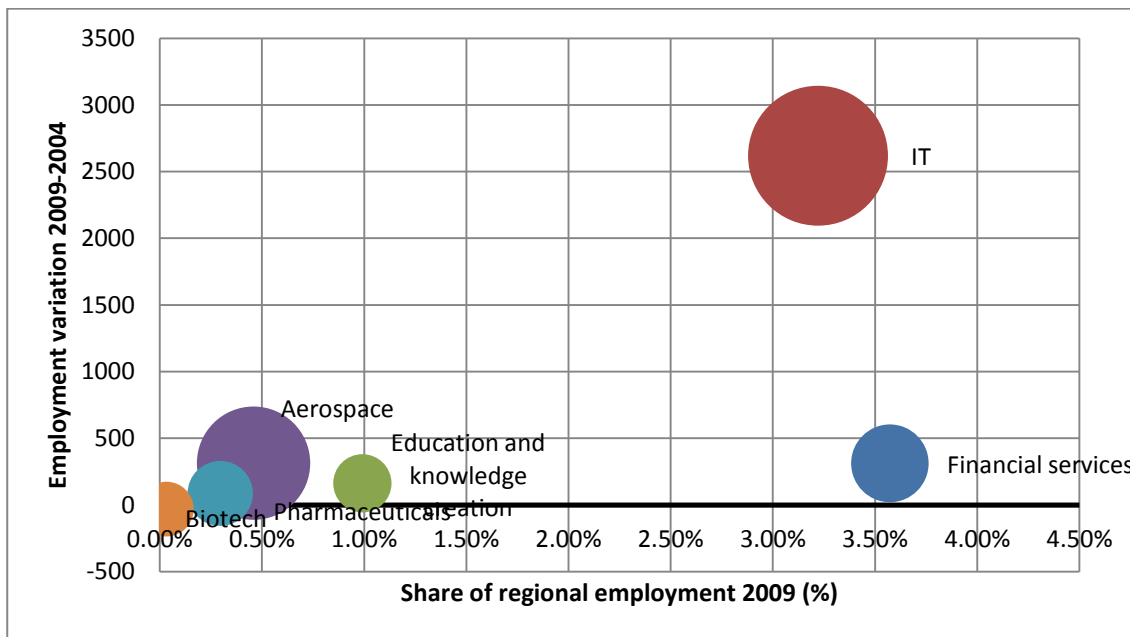
	Share of regional employment 2009	Employment 2009 - 2004	Specialization with respect to Europe 2009	Specialization with respect to Finland	Technology and Knowledge intensity	
Financial services	3,6%	312	0,43	0,56	HIGH TECHNOLOGY AND KNOWLEDGE INTENSITY	
IT	3,2%	2620	1,37	0,83		
Education and knowledge creation	1,0%	162	0,24	0,85		
Aerospace	0,5%	314	0,90	3,88		
Pharmaceuticals	0,3%	86	0,30	0,47		
Biotech	0,0%	-31	0,21	1,17		
Construction materials	12,5%	4738	1,19	0,95	MEDIUM TECHNOLOGY AND KNOWLEDGE INTENSITY	
Metal manufacturing	7,6%	2789	1,43	1,30		
Business services	7,0%	4984	0,76	0,72		
Transportation and logistics	6,2%	665	0,81	0,67		
Processed food	5,7%	-551	0,88	1,33		
Building fixtures, equipment and services	5,1%	2118	1,66	1,65		
Telecom	4,3%	-784	1,43	0,69		
Production technology	4,2%	268	1,75	1,56		
Heavy Machinery	3,3%	1425	2,94	1,70		
Automotive	3,1%	371	0,93	2,01		
Construction	1,3%	-115	0,37	0,35		
Maritime	1,3%	394	1,71	1,57		
Lighting and electrical equipment	1,2%	415	1,91	1,70		
Power generation and transmission	1,0%	54	2,47	1,23		
Entertainment	0,9%	526	0,54	0,67		
Plastics	0,8%	-398	0,63	0,78		
Chemical products	0,4%	191	2,32	3,22		
Instruments	0,4%	-73	0,74	0,56		
Medical devices	0,4%	98	0,50	0,62		
Sporting, recreational and children's goods	0,1%	13	0,18	0,33		
Paper products	9,2%	-1920	4,55	1,60		LOW TECHNOLOGY AND KNOWLEDGE INTENSITY
Farming and animal husbandry	5,0%	7704	2,21	1,32		
Tourism and hospitality	3,1%	419	0,70	0,76		
Media and publishing	2,6%	374	0,88	0,79		
Furniture	1,4%	-1046	1,00	1,03		
Textiles	1,3%	97	0,87	2,51		
Distribution	0,8%	-100	0,25	0,39		
Apparel	0,5%	-495	0,23	1,22		
Footwear	0,4%	-279	0,78	2,17		
Agricultural products	0,2%	24	0,12	0,52		
Leather products	0,1%	-132	0,53	1,69		
Stone quarries	0,0%	-10	0,34	0,58		

Jewellery and precious metals	0,0%	16	0,17	0,32
Oil and gas	0,0%	13	0,02	0,02
Tobacco	0,0%	-18	0,00	#DIV/0!

The detail of the previous table can be also found in the following figures, in which we can see the absolute employment growth (y axis), the relative weight on the regional total employed (x axis) and the regional specialization with respects to Europe (the size of the bubbles).

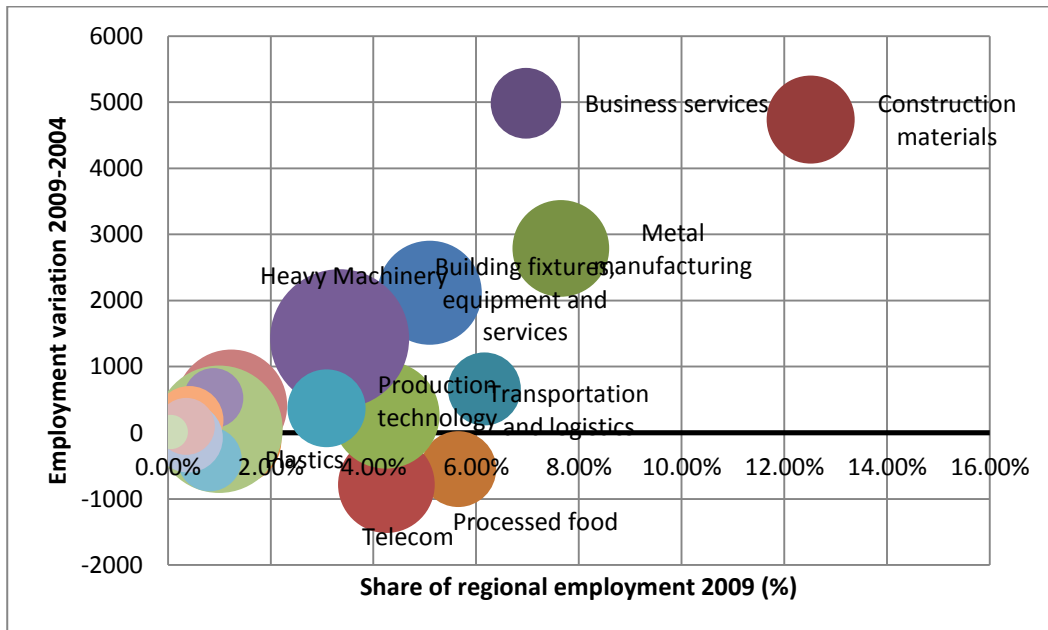
Figure 9 shows that “IT” is a sector that is growing in the region in terms of employment and in which the region is highly specialised with respect to Europe. We can also appreciate that “Financial services” is a sector that concentrates a high number of employees, but in which the region is not highly specialised with respect to Europe.

Figure 9 – High tech and knowledge sectors: evolution 2004- 2009



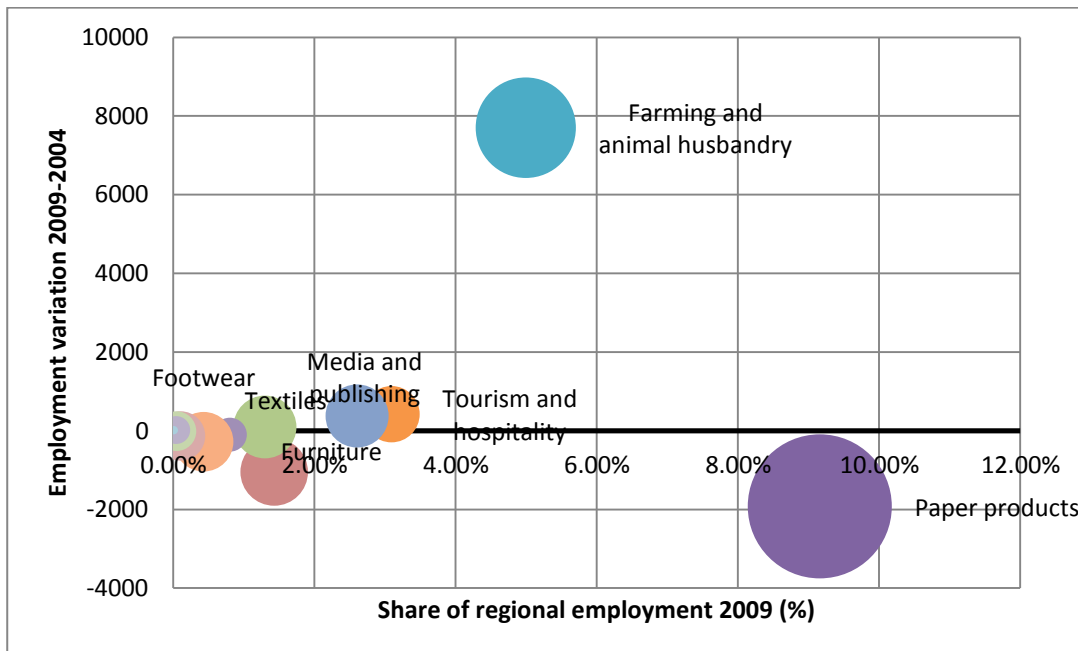
With regards to medium tech sectors, “Business services”, “Construction materials” and “Metal manufacturing” are some of the regional growing sectors in terms of employment and concentrate a high number of the regional employment but in which the region is not highly specialised. It also shows some declining sectors as for example “Telecom” or “Processed food”.

Figure 10 – Medium tech and knowledge sectors: evolution 2004- 2009



With regards to low tech, a growing sector is “Farming and animal husbandry”, in which the region is also strongly specialised. “Paper products” that accounts a high number of the regional employment and in which West Finland is quite specialised with respect to Europe, but it has lost employed in the period.

Figure 11 – Low tech and knowledge sectors: evolution 2004- 2009



Patents

Table 8 and figures 12 and 13 show the degree of specialization by sector of patenting, for EPO applications from 2002 to 2007. Patents are regrouped by domain and sub-field. Fractional counting is used for distributing patents across fields.

Ostrobotnia clearly emerges as specialized in Instruments, whereas in the other sector the patenting activity is rather modest. Table 10 shows that this specialization is due to only one actor: ABB TECHNOLOGY AG.

Table 8 – patents by domain and sub-field

dm	lib_domaines	n	lib_fields	n° patents	field weight*	country weight**	specialisation index ***
1	Electrical engineering	1	Electrical machinery, apparatus, energy	4.83	34.53%	1.04%	8.30
1	Electrical engineering	2	Audio-visual technology	0.00	0.00%	0.00%	0.00
1	Electrical engineering	3	Telecommunications	0.00	0.00%	0.00%	0.00
1	Electrical engineering	4	Digital communication	0.50	3.57%	0.08%	0.62
1	Electrical engineering	5	Basic communication processes	0.00	0.00%	0.00%	0.00
1	Electrical engineering	6	Computer technology	1.17	8.33%	0.10%	0.79
1	Electrical engineering	7	IT methods for management	0.33	2.38%	0.32%	2.58
1	Electrical engineering	8	Semiconductors	0.00	0.00%	0.00%	0.00
2	Instruments	9	Optics	0.00	0.00%	0.00%	0.00
2	Instruments	10	Measurement	4.17	29.76%	0.89%	7.11
2	Instruments	11	Analysis of biological materials	0.00	0.00%	0.00%	0.00
2	Instruments	12	Control	0.00	0.00%	0.00%	0.00
2	Instruments	13	Medical technology	0.00	0.00%	0.00%	0.00
3	Chemistry	14	Organic fine chemistry	0.00	0.00%	0.00%	0.00
3	Chemistry	15	Biotechnology	0.00	0.00%	0.00%	0.00
3	Chemistry	16	Pharmaceuticals	0.00	0.00%	0.00%	0.00
3	Chemistry	17	Macromolecular chemistry, polymers	0.00	0.00%	0.00%	0.00
3	Chemistry	18	Food chemistry	0.00	0.00%	0.00%	0.00
3	Chemistry	19	Basic materials chemistry	0.00	0.00%	0.00%	0.00
3	Chemistry	20	Materials, metallurgy	0.00	0.00%	0.00%	0.00
3	Chemistry	21	Surface technology, coating	0.67	4.76%	0.46%	3.67
3	Chemistry	22	Micro-structural and nano-technology	0.00	0.00%	0.00%	0.00
3	Chemistry	23	Chemical engineering	0.00	0.00%	0.00%	0.00
3	Chemistry	24	Environmental technology	0.00	0.00%	0.00%	0.00
4	Mechanical engineering	25	Handling	0.67	4.76%	0.10%	0.83
4	Mechanical engineering	26	Machine tools	0.00	0.00%	0.00%	0.00
4	Mechanical engineering	27	Engines, pumps, turbines	0.33	2.38%	0.29%	2.36
4	Mechanical engineering	28	Textile and paper machines	0.00	0.00%	0.00%	0.00
4	Mechanical engineering	29	Other special machines	0.33	2.38%	0.08%	0.63
4	Mechanical engineering	30	Thermal processes and apparatus	0.00	0.00%	0.00%	0.00
4	Mechanical engineering	31	Mechanical elements	0.33	2.38%	0.16%	1.27
4	Mechanical engineering	32	Transport	0.67	4.76%	0.20%	1.63
5	Other fields	33	Furniture, games	0.00	0.00%	0.00%	0.00
5	Other fields	34	Other consumer goods	0.00	0.00%	0.00%	0.00
5	Other fields	35	Civil engineering	0.00	0.00%	0.00%	0.00

* ratio: (n° of patents of the region in field x) / (total patents of the region)

** ratio: (n° of patents of the region in field x) / (n° of patents of the country in field x)

*** ratio: (patenting weight of field x in the region) / (patenting weight of field x in the country)

Figure 12 – Patenting by domain: total share

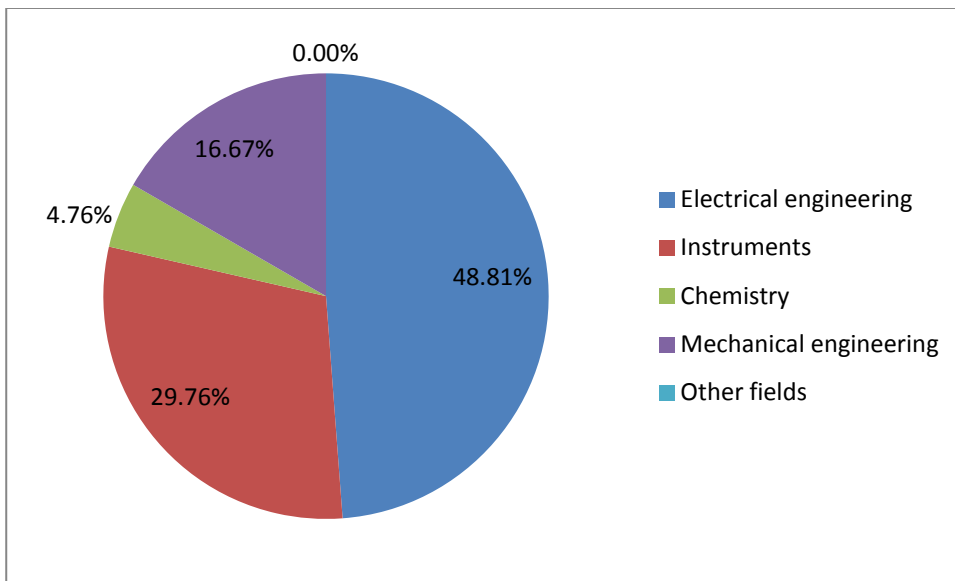


Figure 13 - Patenting by domain: specialization

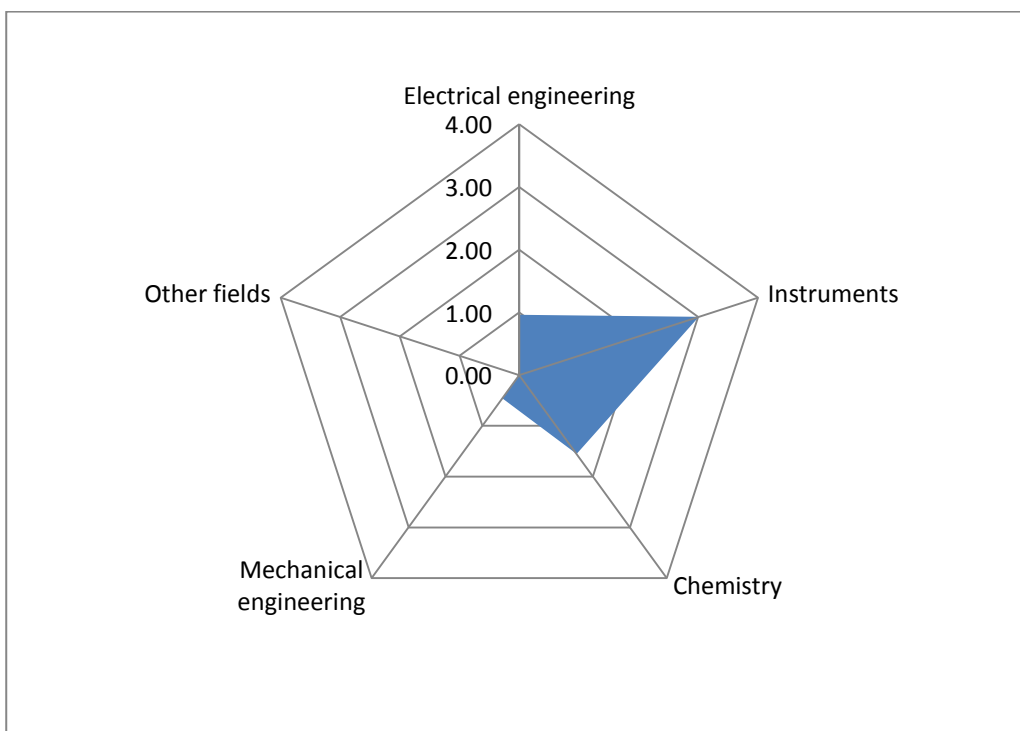


Table 9 shows the most important patenting subjects.

Table 9 – Most important applicants

name	count
ABB TECHNOLOGY AG	8
KWH PIPE AB OY	1
WAHLROOS ARI	1
BRADBURY JEFF	1
UPC KONSULTOINTI OY	1

RAUTIO AARO	1
KALLIO ARMAS	1
VANHALA KARI	1
BOREALIS TECH OY	1
UDD STURE	1

Annex 1 - Regional Research and technological specialisation in FP7

Context

FP7 allocates a total of EUR 32 413 million to the Cooperation specific programme. This funding is mainly aimed at supporting cooperation between universities, industry, research centres and public authorities through collaborative research projects. As of October 2011, 3 725 projects were funded through the FP7 cooperation programme representing a total of 14.5€bn.

The FP7 cooperation programme covers 11 themes (Cf. Box 1) which themselves cover a number of research areas. For the purposes of this study, 188 research areas have been selected in order to perform a regional specialization analysis of each theme.

Box 1 The 11 themes of the FP7 cooperation programme (and the number of research areas for each of them)

- Health (13 research areas)
- Food, Agriculture, and Biotechnology (17 research areas)
- Information and Communication Technologies (12 research areas)
- Nanosciences, Nanotechnologies, Materials and new Production Technologies (16 research areas)
- Energy (8 research areas)
- Environment (including Climate Change) (9 research areas)
- Transport
 - Aeronautics (17 research areas)
 - Surface transport (15 research areas)
- Socio-economic sciences and Humanities (18 research areas)
- Space (5 research areas)
- Security (7 research areas)

Methodological aspects

The specialization analysis aims to establish regional profiles based on thematic participation in the cooperation programme of FP7. The principle of the specialization analysis is to compare, within a theme, the budget breakdown into research areas between the European, national and regional levels.

The perimeter of the analysis only concerns research activities. In order to improve the relevance of the specialization analysis, cross-cutting activities, support actions to improve international collaborations, to promote SMEs or for NCP activities are not taken into account.

The specialization analysis is conditioned by the creation of a clean and reliable regional monitoring tool which takes into account headquarter effects. This was done during as part of the second component of the AMCER, which allowed validating the FP participations of each of the nine regions covered by the project.

The specialization analysis has been carried out for each theme of the cooperation programme. As an underlying hypothesis, we consider there is no asymmetry of information within a theme. This means that we consider national and regional stakeholders to be equally informed about all the research areas and funding opportunities covered in the theme.

In order to avoid the appearance of a mass effect of some research areas against others, the share (weight) of the area within the theme is not considered in the specialization profile. Instead, the European profile is considered as the baseline (Base 100) for regional and national comparisons. The specialization profile is

established by measuring the spread between the EU baseline and national or regional EC funding distribution among the research areas.

In other words, this methodology allows identifying which research areas are over-represented and under-represented among all research areas. This provides information regarding the preferences of national and regional research communities in terms of priority research areas. It should be taken into account however, that the analysis does not consider the possible existing competition between European, national and regional funding opportunities at the stakeholder level.

Remarks on the specialisation indexes

The analysis does not constitute a performance indicator. Instead, it presents the differences in terms of distribution of funding among research areas at the national and regional level, compared to the FP standard, and regardless of the total funding weight of each research area. A comparison between the national profile and the EU profile illustrates the national and regional specialization trends. A comparison can also be carried out between national and regional specialization profiles, allowing to know if the regional specialization profile follows the national profile. The difference between profiles can be unlighted by national or regional experts aware of the territorial.

In order to identify areas of specialization, readers must identify the specialization index provided for each research area. If the 'specialisation index' is above the European 100 base, it can be stated that the region or country is specialized in that particular research area. On the other hand, if the specialization index stands below 100, the area is underrepresented and there is no indication of specialization in this area.

For each theme covered by the FP7 cooperation programme, the three following sets of information are provided:

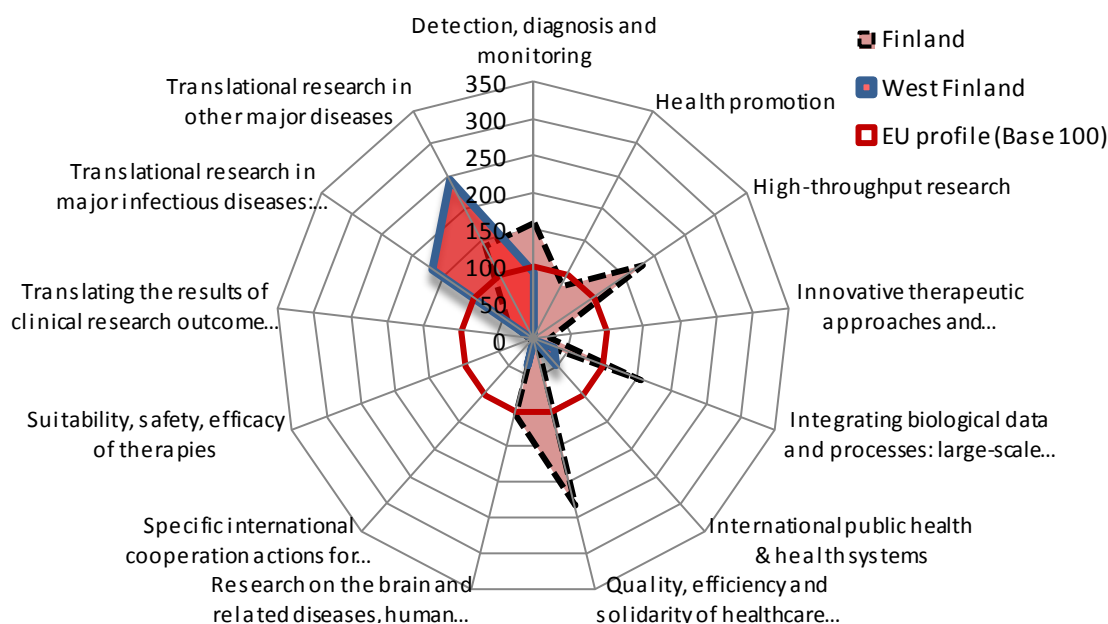
- i) The overall EU budget distribution by research area
- ii) The specialisation profile at the national and regional level, providing a picture of specialisation trends for the two levels. A comparison between the two levels can give information on regional specialisation trends (and highlight strategic initiatives taken at regional level).
- iii) The ranking of research areas at the national and regional levels, according their specialisation scores. The table ranks the research areas according to their specialization score (in base 100) at the national and regional level (left and right column respectively). If the score is above 100, the area is over represented in comparison to the European standard, providing an indication on the specialization trend of the country or the region.

Health

Table 1 Budget breakdown in research areas at the FP cooperation specific-programme level

Rk	Research area	%
1	Translational research in other major diseases	21.6%
2	Translational research in major infectious diseases: To confront major threats to public health	19.1%
3	Integrating biological data and processes: large-scale data gathering, systems biology	17.6%
4	Innovative therapeutic approaches and interventions	10.0%
5	Research on the brain and related diseases, human development and ageing	8.3%
6	Detection, diagnosis and monitoring	6.7%
7	High-throughput research	4.0%
8	Translating the results of clinical research outcome into clinical practice including better use of medicines, and appropriate use of behavioural and organisational interventions and new health therapies and technologies	2.9%
9	International public health & health systems	2.6%
10	Quality, efficiency and solidarity of healthcare systems including transitional health systems	2.6%
11	Health promotion	2.1%
12	Suitability, safety, efficacy of therapies	1.3%
13	Specific international cooperation actions for health system research	1.1%

Figure 7 Specialisation profiles of Finland and West Finland



The following table ranks the research areas according to their specialization score (in base 100) at the national and regional level (left and right column respectively). If the score is above 100, the area is over represented in comparison to the European standard, providing an indication on the specialization trend of the country or the region.

Table 2 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Quality, efficiency and solidarity of healthcare systems including transitional health systems	231	1	Translational research in major infectious diseases: To confront major threats to public health	244
2	High-throughput research	178	2	Translational research in major infectious diseases: To confront major threats to public health	167
3	Detection, diagnosis and monitoring	159	3	Detection, diagnosis and monitoring	91
4	Integrating biological data and processes: large-scale data gathering, systems biology	154	4	INTERNATIONAL PUBLIC HEALTH & HEALTH SYSTEMS	45
5	Translational research in major infectious diseases: To confront major threats to public health	143	5	Research on the brain and related diseases, human development and ageing	35
6	Research on the brain and related diseases, human development and ageing	105	6	Integrating biological data and processes: large-scale data gathering, systems biology	29
7	Health promotion	82			
8	Translational research in major infectious diseases: To confront major threats to public health	43			
9	Innovative therapeutic approaches and interventions	21			
10	Translating the results of clinical research outcome into clinical practice including better use of medicines, and appropriate use of behavioural and organisational interventions and new health therapies and technologies	6			
11	INTERNATIONAL PUBLIC HEALTH & HEALTH SYSTEMS	5			

Food, Agriculture, and Biotechnology

Table 3 Budget breakdown in research areas

Rk	Research area	%
1	Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture); plant health and crop protection	18.4%
2	Socio-economic research and support to policies	9.8%
3	Nutrition	8.8%
4	Optimised animal health production and welfare across agriculture, fisheries and aquaculture	8.8%
5	Marine and fresh-water biotechnology (blue biotechnology)	8.1%
6	Food processing	7.1%
7	Food quality and safety	6.4%
8	Novel sources of biomass and bioproducts	6.3%
9	Enabling Research	6.0%
10	Industrial biotechnology: novel high added-value bio-products and bio-processes	5.4%

11	Environmental impacts and total food chain	4.2%
12	Consumers	3.3%
13	Environmental biotechnology	3.0%
14	Emerging trends in biotechnology	2.3%
15	The Ocean of Tomorrow	1.5%
16	Biorefinery	0.5%
17	Energy Efficiency in Agriculture	0.1%

Figure 8 Specialisation profiles of Finland and West Finland

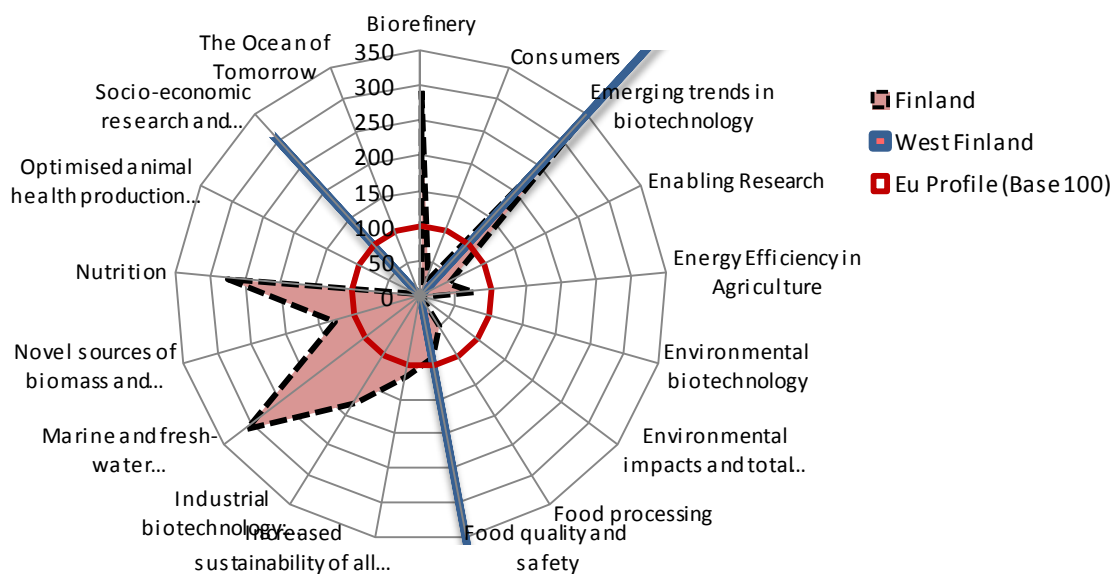


Table 4 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Emerging trends in biotechnology	323	1	Emerging trends in biotechnology	800
2	Marine and fresh-water biotechnology (blue biotechnology)	310	2	Food quality and safety	516
3	Biorefinery	293	3	Socio-economic research and support to policies	313
4	Nutrition	276			
5	Industrial biotechnology: novel high added-value bio-products and bio-processes	176			
6	Novel sources of biomass and bioproducts	128			
7	Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture); plant health and crop protection	114			
8	Food quality and safety	87			
9	Energy Efficiency in Agriculture	75			

10	Food processing	48
11	Enabling Research	43
12	Socio-economic research and support to policies	34
13	Consumers	27
14	Optimised animal health production and welfare across agriculture, fisheries and aquaculture	11

Information and Communication Technologies

Table 5 Budget breakdown in research areas

Rk	Research area	%
1	Pervasive and Trustworthy network and service infrastructures	26.4%
2	Components, systems, engineering	21.6%
3	Towards sustainable and personalised healthcare	9.2%
4	Cognitive systems, interaction, robotics	9.0%
5	Digital libraries and content	8.8%
6	ICT for mobility, environmental sustainability and energy efficiency	8.5%
7	Future and emerging technologies	8.3%
8	ICT for Independent Living, Inclusion and Governance	3.1%
9	Smart Factories/virtual factories	2.4%
10	Future Internet experimental facility and experimentally-driven research	1.1%
11	ICT for the Fully Electric Vehicle	1.0%
12	Exa-scale computing, software and simulation	0.4%

Figure 9 Specialisation profiles of Finland and West Finland

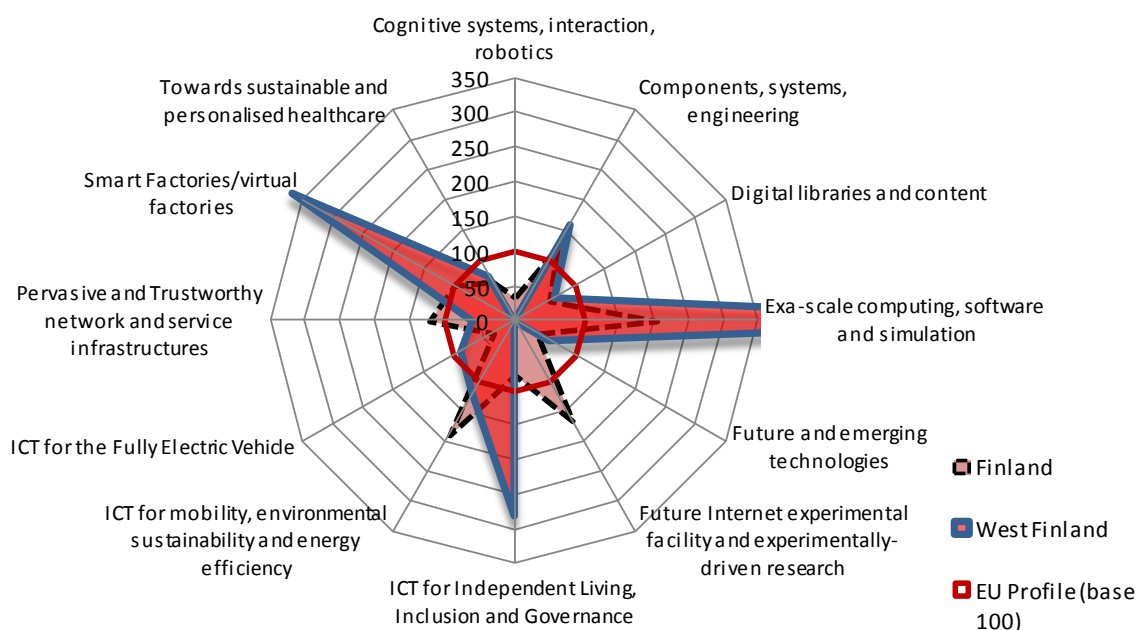


Table 6 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Digital libraries and content	204	1	Exa-scale computing, software and simulation	823
2	ICT for Independent Living, Inclusion and Governance	189	2	Smart Factories/virtual factories	368
3	Future and emerging technologies	165	3	ICT for Independent Living, Inclusion and Governance	281
4	ICT for the Fully Electric Vehicle	123	4	Components, systems, engineering	160
5	Cognitive systems, interaction, robotics	122	5	ICT for mobility, environmental sustainability and energy efficiency	121
6	Pervasive and Trustworthy network and service infrastructures	101	6	ICT for the Fully Electric Vehicle	88
7	Towards sustainable and personalised healthcare	100	7	Towards sustainable and personalised healthcare	74
8	Future Internet experimental facility and experimentally-driven research	78	8	Digital libraries and content	67
9	Smart Factories/virtual factories	65	9	Pervasive and Trustworthy network and service infrastructures	60
10	Components, systems, engineering	57	10	Future and emerging technologies	57
11	Exa-scale computing, software and simulation	37			
12	ICT for mobility, environmental sustainability and energy efficiency	35			

Nanosciences, Nanotechnologies, Materials and new Production Technologies

Table 7 Budget breakdown in research areas

Rk	Sub theme	Research area	%
1	Nanosciences	Nanotechnology for benefiting environment, energy and health	12.9%
2	New production	Adaptive production systems	12.1%
3	Nanosciences	Maximising the contribution of Nanotechnology on sustainable development	9.4%
4	Materials	Innovative materials for advanced applications	8.5%
5	New production	Rapid transfer and integration of new technologies into the design and operation of manufacturing processes	7.8%
6	Materials	Using engineering to develop high performance knowledge-based materials	7.6%
7	New production	Exploitation of the convergence of technologies	7.6%
8	New production	Development and validation of new industrial models and strategies	6.0%
9	Materials	Enabling R&D in Nanostructured materials	5.8%
10	Materials	Advances in chemical technologies and materials processing	5.7%
11	Materials	Structuring actions/new materials	4.6%
12	Nanosciences	Ensuring the safety of Nanotechnology	4.1%
13	New production	Networked production	3.7%
14	Integration	Substantial innovation in the European medical industry: development of nanotechnology-based systems for in-vivo diagnosis and therapy (in coordination with topic HEALTH-2007-2.4.1-7 and HEALTH-2007-1.2-3 in Theme 1 Health)	2.6%
15	Integration	Smart materials for applications in the sectors of construction and of machinery and production equipment	0.8%
16	Integration	Sustainable new products and markets through bioproduction of green forest-based chemicals and materials	0.7%

Figure 10 Specialisation profiles of Finland and West Finland

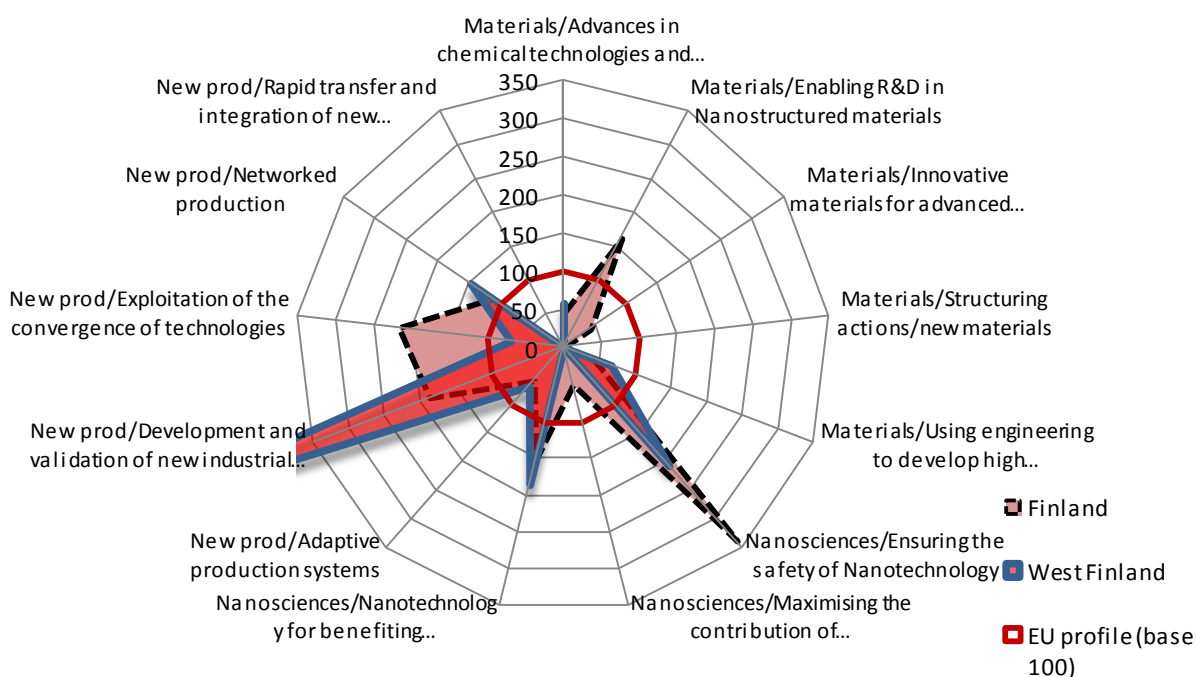


Table 8 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Nanosciences/Ensuring the safety of Nanotechnology	341	1	New prod/Development and validation of new industrial models and strategies	517
2	New prod/Exploitation of the convergence of technologies	217	2	Nanosciences/Ensuring the safety of Nanotechnology	379
3	New prod/Development and validation of new industrial models and strategies	187	3	Nanosciences/Nanotechnology for benefiting environment, energy and health	274
4	Materials/Enabling R&D in Nanostructured materials	162	4	New prod/Networked production	173
5	Nanosciences/Nanotechnology for benefiting environment, energy and health	151	5	New prod/Exploitation of the convergence of technologies	81
6	New prod/Networked production	113	6	New prod/Adaptive production systems	52
7	New prod/Adaptive production systems	58			
8	Nanosciences/Maximising the contribution of Nanotechnology on sustainable development	50			
9	Materials/Advances in chemical technologies and materials processing	46			
10	Materials/Innovative materials for advanced applications	43			
11	Materials/Using engineering to develop high performance knowledge-based materials	41			

Energy

Table 9 Budget breakdown in research areas

Rk	Research area	%
1	Renewable electricity generation	31.5%
2	Renewable fuel production	21.0%
3	Smart energy networks	13.7%
4	Energy efficiency and savings	13.3%
5	CO2 capture and storage technologies for zero emission power generation	9.4%
6	Clean coal technologies	5.9%
7	Hydrogen and fuel cells	3.1%
8	Knowledge for energy policy making	2.1%

Figure 11 Specialisation profiles of Finland and West Finland

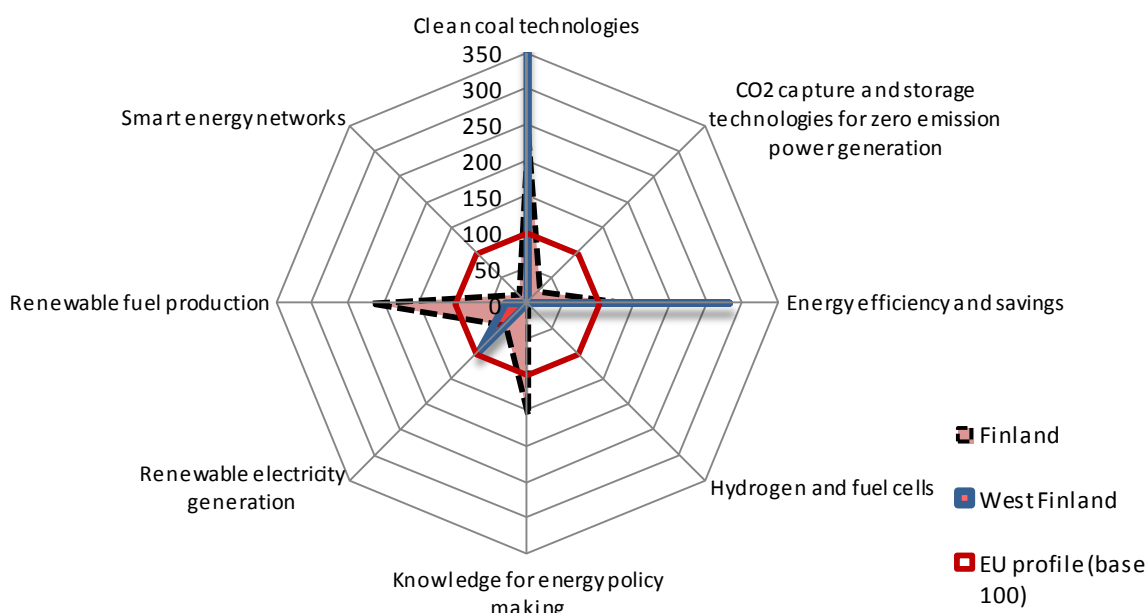


Table 10 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Clean coal technologies	238	1	Clean coal technologies	445
2	Renewable fuel production	218	2	Energy efficiency and savings	281
3	Knowledge for energy policy making	157	3	Renewable electricity generation	95
4	Energy efficiency and savings	139	4	Renewable fuel production	31
5	Renewable electricity generation	44			
6	CO2 capture and storage technologies for zero emission power generation	23			
7	Smart energy networks	18			

Environment (including Climate Change)

Table 11 Budget breakdown in research areas

Rk	Sub theme	Research area	%
1	Climate change, pollution, and risks	Pressures on environment and climate	19.5%
2	Sustainable management of resources	Conservation and sustainable management of natural and man-made resources and biodiversity	17.4%
3	Environmental technologies	Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment	17.1%
4	Climate change, pollution, and risks	Environment and Health	10.4%
5	Earth observation and assessment	Earth and ocean observation systems and monitoring methods for the environment and	9.7%

	tools for sustainable development	sustainable development	
6	Sustainable management of resources	Management of marine environments	9.0%
7	Climate change, pollution, and risks	Natural hazards	7.0%
8	Earth observation and assessment tools for sustainable development	Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation	6.8%
9	Environmental technologies	Protection, conservation and enhancement of cultural heritage, including human habitat	3.2%

Figure 12 Specialisation profiles of Finland and West Finland

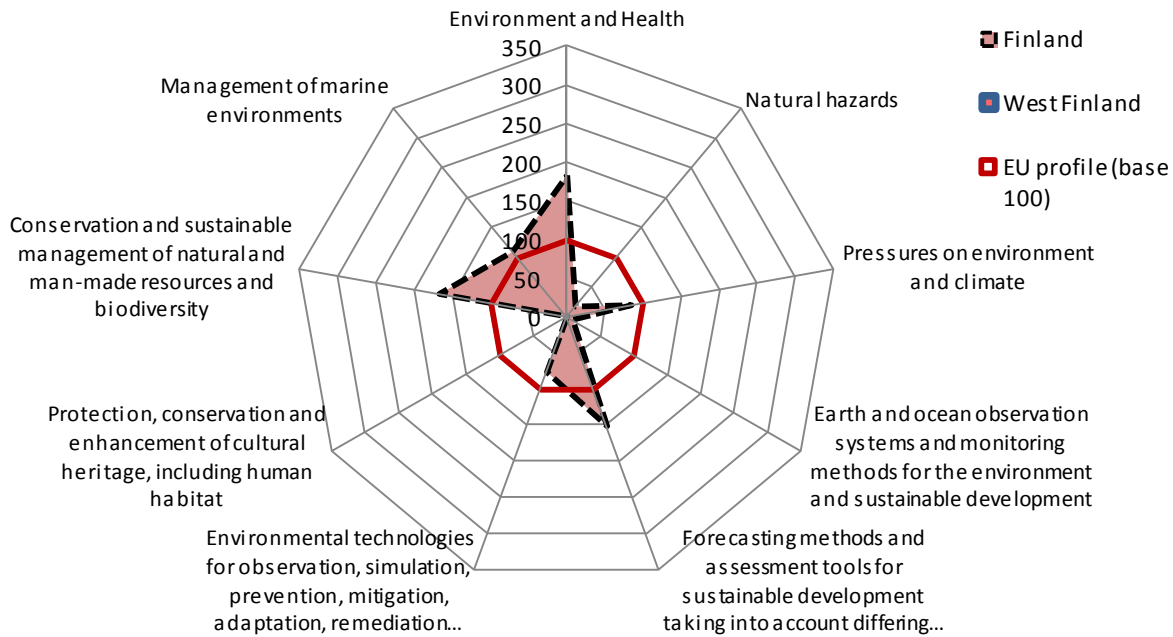


Table 12 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Environment and Health	183			
2	Conservation and sustainable management of natural and man-made resources and biodiversity	168			
3	Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation	151			
4	Management of marine environments	110			
5	Pressures on environment and climate	85			
6	Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment	77			
7	Natural hazards	17			
8	Earth and ocean observation systems and monitoring methods for the environment and	8			

Transport (Aeronautics)

Table 13 Budget breakdown in research areas

Rk	Research area	%
1	Propulsion	21.9%
2	Aerostructures	15.1%
3	Design Systems and Tools	8.8%
4	Systems and Equipment	8.6%
5	Production	7.0%
6	Flight Physics	6.5%
7	Avionics	4.2%
8	Maintenance	3.9%
9	Novel Air Transport Vehicles	3.9%
10	Airports	3.8%
11	Human Factors	3.5%
12	Green Air Transport Operations	3.3%
13	Guidance and Control	2.6%
14	Systems	2.3%
15	Personal air transport systems	2.0%
16	Lift	1.7%
17	Interior space	1.0%

Figure 13 Specialisation profiles of Finland and West Finland

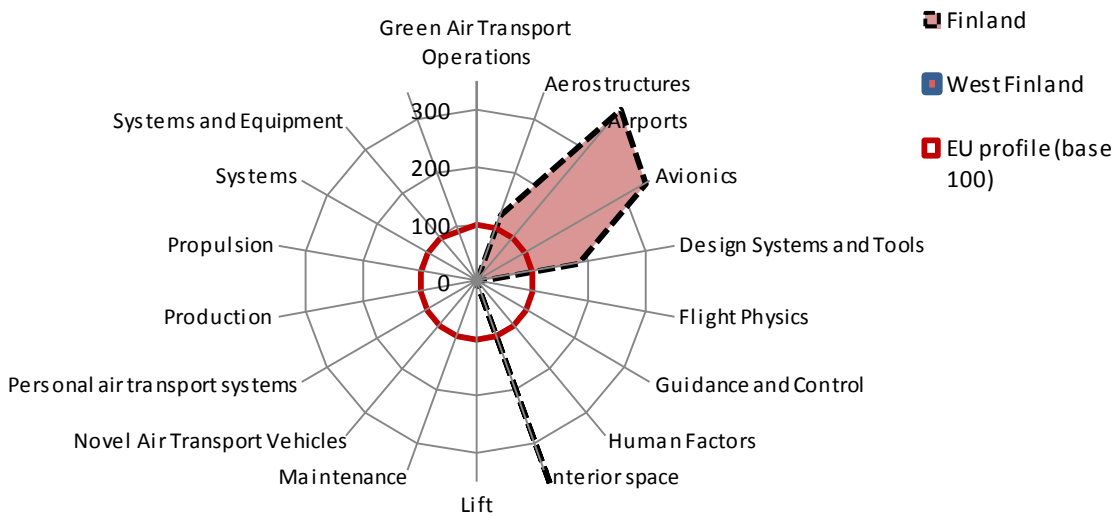


Table 14 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Human Factors	3585			
2	Avionics	392			
3	Design Systems and Tools	341			
4	Aerostructures	181			
5	Airports	124			

Transport (Surface transport)

Table 15 Budget breakdown in research areas

Rk	Research area	%
1	The greening of products and operations	24.0%
2	Integrated safety and security for surface transport systems	21.2%
3	Competitive surface transport products and services	12.1%
4	Innovative strategies for clean urban transport (CIVITAS Plus II)	10.8%
5	Logistics and intermodal transport	7.7%
6	New transport and mobility concepts	7.4%
7	Interoperability and Safety	4.1%
8	Environment-friendly and efficient industrial processes	3.0%
9	Maritime and inland waterway transport	2.9%
10	High quality public transport	2.7%
11	Policy support	1.6%
12	Integrated electric auxiliaries and on-board systems	1.0%
13	Socio-economic issues	0.8%
14	Electrical machines	0.4%
15	Optimised thermal engine development and integration	0.4%

Figure 14 Specialisation profiles of Finland and West Finland

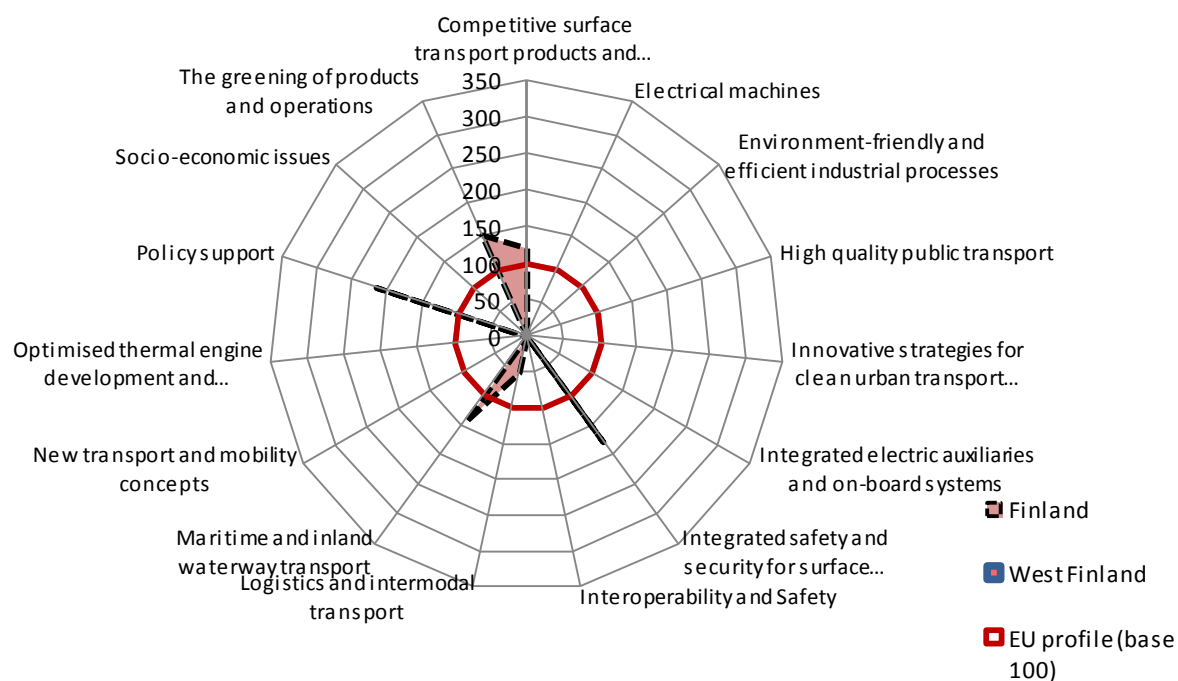


Table 16 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Policy support	217			
2	Integrated safety and security for surface transport systems	177			
3	The greening of products and operations	152			
4	Maritime and inland waterway transport	143			
5	Competitive surface transport products and services	121			
6	Logistics and intermodal transport	50			

Socio-economic sciences and Humanities

Table 17 Budget breakdown in research areas

Rk	Research area	%
1	Socio-economic development trajectories	16.1%
2	Participation and Citizenship in Europe	9.0%
3	Interactions and interdependences between world regions and their implications	9.0%
4	Societal trends and lifestyles	8.2%

5	Diversities and Commonalities in Europe	7.8%
6	Changing role of knowledge throughout the economy	6.5%
7	Regional, territorial and social cohesion	6.5%
8	Conflicts, peace and human rights	6.1%
9	Structural changes in the European knowledge economy and society	5.9%
10	Cultural interactions in an international perspective	5.2%
11	Demographic changes	3.7%
12	Foresight activities	3.7%
13	Strengthening policy coherence and coordination in Europe	3.0%
14	Europe's changing role in the world	2.8%
15	Developing better indicators for policy	2.5%
16	Provision of underlying official statistics	1.7%
17	Use of indicators and related approaches for the evaluation of research policies and programmes	1.2%
18	Current use of indicators in policy	1.1%

Figure 15 Specialisation profiles of Finland and West Finland

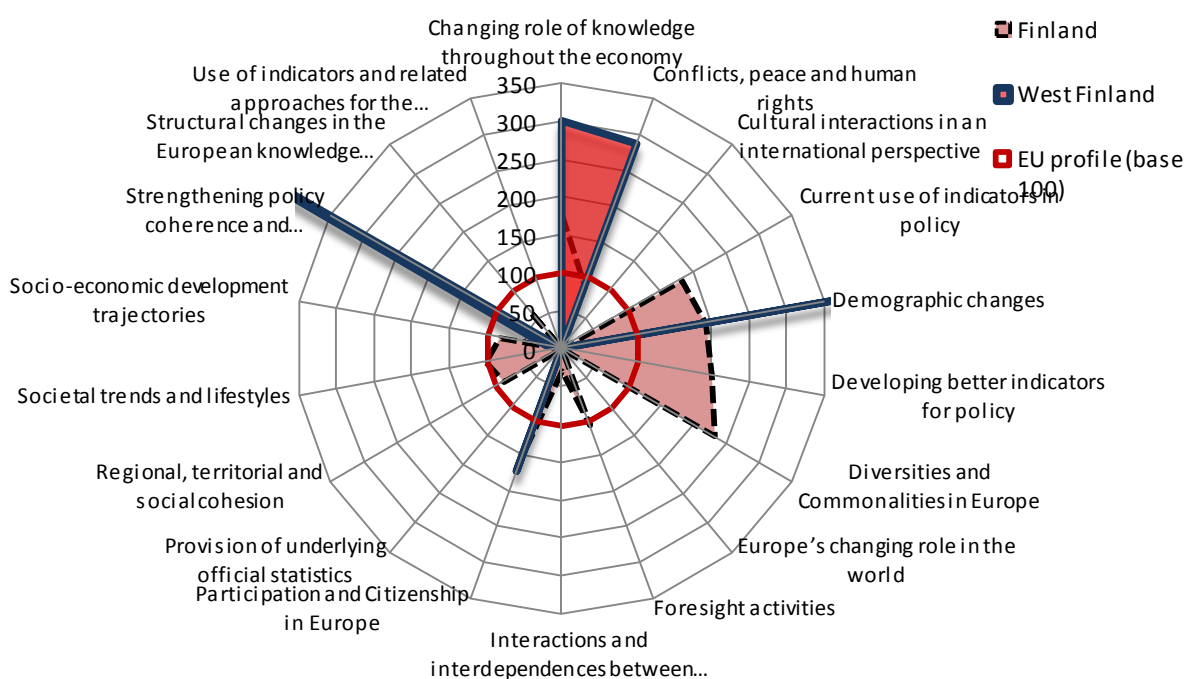


Table 18 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Diversities and Commonalities in Europe	231	1	Strengthening policy coherence and coordination in Europe	837
2	Developing better indicators for policy	199	2	Demographic changes	495
3	Demographic changes	191	3	Changing role of knowledge throughout the economy	301
4	Current use of indicators in policy	181	4	Conflicts, peace and human rights	288

5	Changing role of knowledge throughout the economy	177	5	Participation and Citizenship in Europe	173
6	Participation and Citizenship in Europe	146	6	Socio-economic development trajectories	21
7	Foresight activities	108			
8	Societal trends and lifestyles	101			
9	Conflicts, peace and human rights	88			
10	Regional, territorial and social cohesion	88			
11	Socio-economic development trajectories	83			
12	Structural changes in the European knowledge economy and society	64			
13	Interactions and interdependences between world regions and their implications	29			

Space

Table 19 Budget breakdown in research areas

Rk	Research area	%
1	(Pre-)operational validation of GMES services and products	56.2%
2	Research to support space science and exploration	14.9%
3	Research to support space transportation and key technologies	13.9%
4	Continuity of GMES services in the areas of Marine and Atmosphere	8.0%
5	Research into reducing the vulnerability of space assets	7.0%

Figure 16 Specialisation profiles of Finland and West Finland

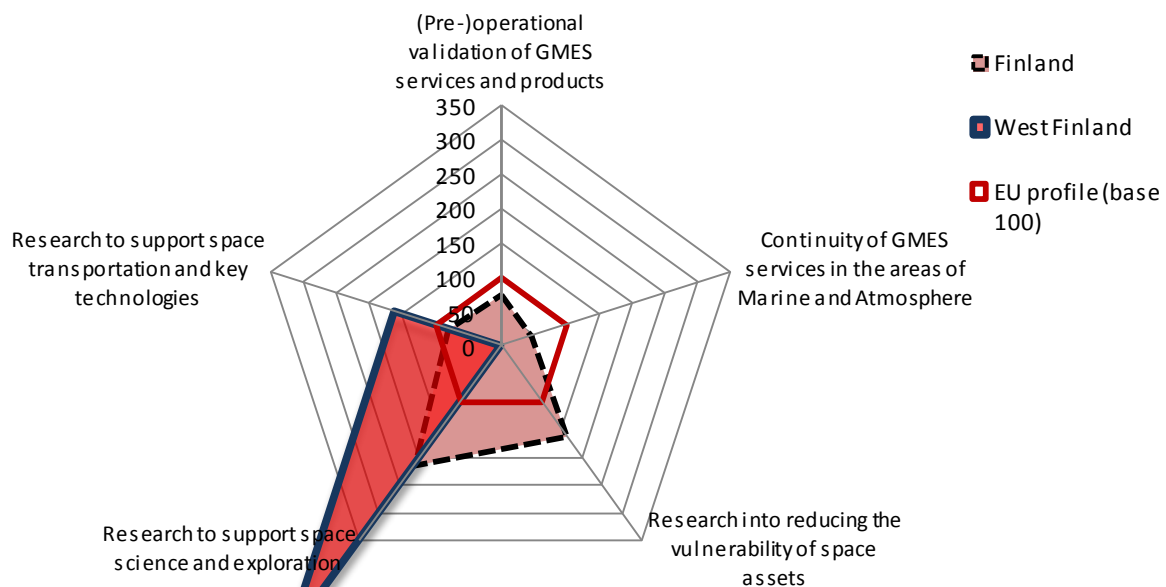


Table 20 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Research to support space science and exploration	212	1	Research to support space science and exploration	521
2	Research into reducing the vulnerability of space assets	161	2	Research to support space transportation and key technologies	162
3	Research to support space transportation and key technologies	81			
4	(Pre-)operational validation of GMES services and products	75			
5	Continuity of GMES services in the areas of Marine and Atmosphere	46			

Security

Table 21 Budget breakdown in research areas

Rk	Research area	%
1	Intelligent surveillance and enhancing border security	23.3%
2	Restoring security and safety in case of crisis	22.2%
3	Increasing the Security of citizens	19.4%
4	Increasing the Security of infrastructures and utilities	17.9%
5	Security and society	8.6%
6	Security Research coordination and structuring	4.3%
7	Security systems integration, interconnectivity and Interoperability	4.2%

Figure 17 Specialisation profiles of Finland and West Finland

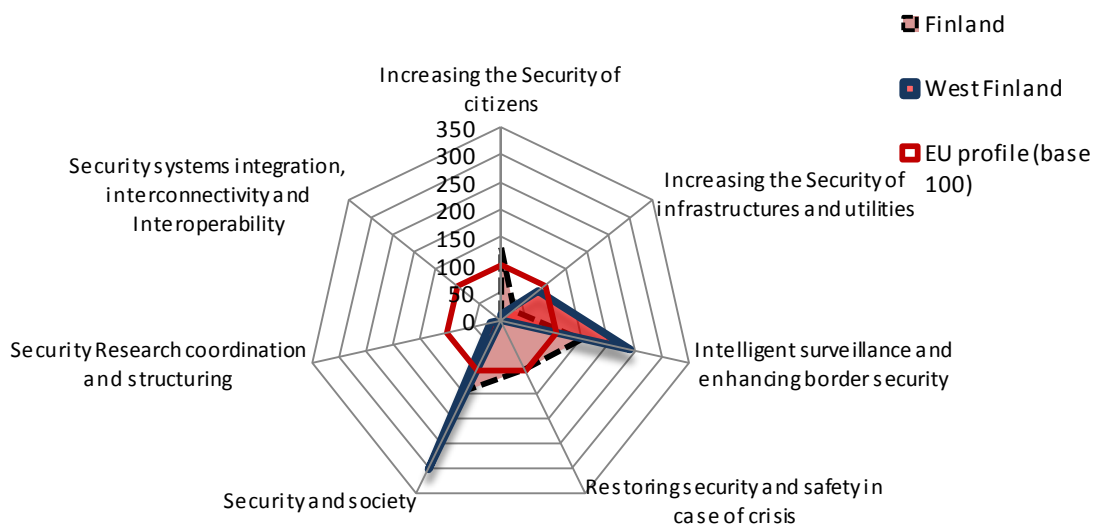


Table 22 Specialisation ranking for Finland and West Finland

Rk	Finland	Index base 100	Rk	West Finland	Index base 100
1	Intelligent surveillance and enhancing border security	148	1	Security and society	302
2	Security and society	138	2	Intelligent surveillance and enhancing border security	239
3	Increasing the Security of citizens	134	3	Increasing the Security of infrastructures and utilities	86
4	Restoring security and safety in case of crisis	97	4	Security Research coordination and structuring	19
5	Increasing the Security of infrastructures and utilities	30	5	Increasing the Security of citizens	10
6	Security Research coordination and structuring	18			

Annex 2 – FP7 participation scoreboard

This section covers all the indicators produced for the FP7 after validation of the list of participations and contains the following parts:

- i. Headquarter analysis
- ii. Main regional indicators
- iii. Intraregional indicators
- iv. International cooperation

Headquarter analysis

This section presents the results of the headquarter effect analysis for the focused region. The following table presents number of modified participations of the region, after elimination of the existing headquarter effect. The total number of participations in the region is estimated by adding the total number of participations with no headquarter effect, to the ingoing participations (participations previously attributed to an outside region⁹, but now attributed to the focused region).

Table 23 Overall result of the Headquarter analysis

<i>Type of participation</i>	<i>Nbr of participations</i>
(1) Nbr of participation with no headquarter effect	167
(2) Nbr of ingoing participations	46
(3) Nbr of outgoing participations	4
Total nbr of participations (1)+(2)	213

The following table presents a breakdown of the previous table by geographical origin of participations. The second and third columns indicate the NUTS II territory from which the participation is added or subtracted. In the case of incoming participations, the focused region¹⁰ gains a participation, while the impacted region loses one. The opposite is true of outgoing participations.

Table 24 Participation localisation detail (ingoing participations, outgoing participations and static participations)

<i>Participation flow</i>	<i>Regions with participations to subtract</i>	<i>Regions with participation to add</i>	<i>Number of participation concerned</i>	<i>Total</i>	<i>%</i>
In	F181	F193	5	46	21,6%
In	F181	F194	2		

⁹ Impacted region.

¹⁰ The region being analysed in the current scoreboard.

In	FI181	FI195	1		
In	FI183	FI195	1		
In	FI181	FI197	35		
In	FI183	FI197	2		
out	FI195	FI183	1		
out	FI197	FI185	1		
out	FI193	FI1A2	2	4	2,3%
no Headquarter effect			167	167	78,4%
Total (after correction)				213	100,0%

The following table presents the distribution of participations (ingoing, outgoing, no headquarter effect) by participant typology (HES, OTH, PRC, PUB, REC).

Table 25 Typology of Ingoing, Outgoing and Static participations

Organisation type	Ingoing participations		Outgoing participations		Static participations	
Higher of secondary education est.(HES)	6	13,0%		0,0%	100	59,9%
Other (OTH)		0,0%		0,0%	2	1,2%
Private commercial(PRC)	6	13,0%	4	100,0%	59	35,3%
Public body (excl.research and education) (PUB)		0,0%		0,0%	5	3,0%
Research organisations (REC)	34	73,9%		0,0%	1	0,6%
Total	46	100,0%	4	100,0%	167	100,0%

Regional indicators

This section presents a set of indicators allowing to compare and characterise the participation of the region in FP7, in light of national indicators. It also presents the distribution of EC funding at an infra-regional level (N-1 if the focus region is considered as N).

West Finland in the FP7

The following table gives an overview of the weight of the region at national level in terms of number of participations, number of coordinations and volume of funding received. It allows to compare regional figures (and their weight at the national level), to national figures (and their weight at the European level).

Table 26 Share of the region at national level

	West Finland	FI	FP	% in West Finland in FI	% in FI in FP
Nbr of participations in projects	213	1445	69 762	14,7%	2,1%
Nbr of coordinations	33	205	12 929	16,1%	1,6%
EC contribution (mInEUR)	61,9	484,3	269 300,1	12,8%	0,2%

Participant Typology

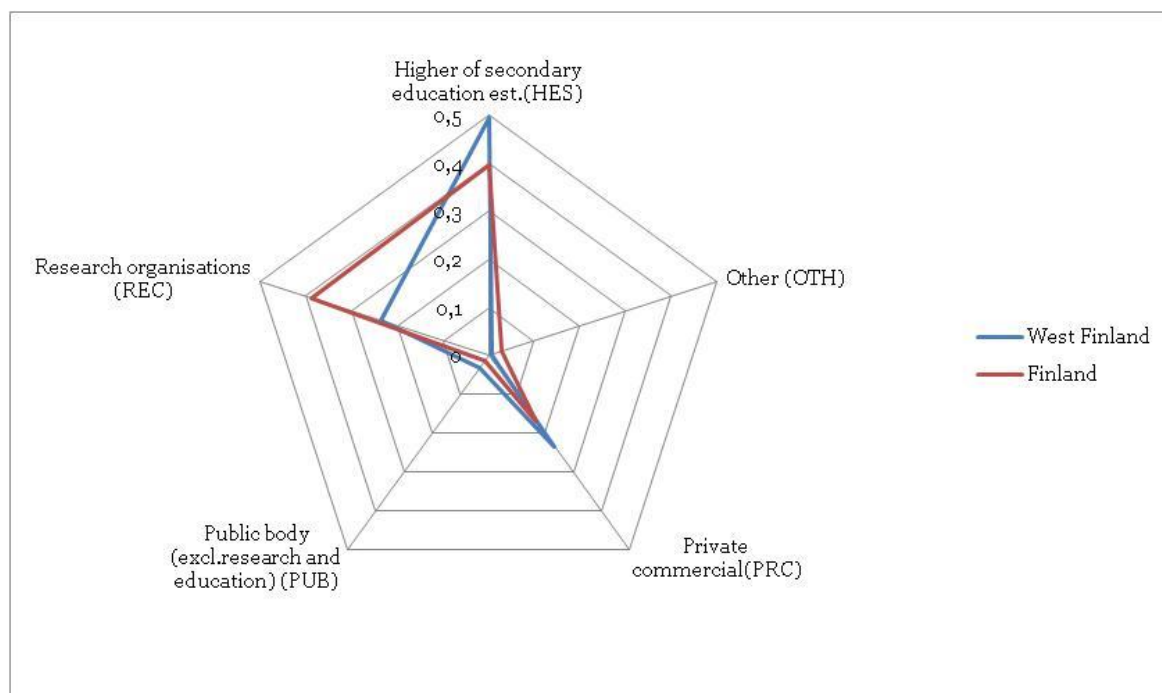
The following table presents the distribution of participations, coordinations and EC contributions according to the different types of participants. A comparison of the distribution of participants between the regional and national level allows to identify the particularities of the focused region.

Table 27 Participation typology-comparison between regional and national level

	West Finland				Finland			
	Nbr of participations in projects	Nbr of coordinations	EC contribution (mln)	%	Nbr of participations in projects	Nbr of coordinations	EC contribution (mln)	%
Higher of secondary education est.(HES)	106	23	30,6	49,5%	516	115	192,0	39,7%
Other (OTH)	2		0,4	0,7%	54	8	14,6	3,0%
Private commercial(PRC)	65	3	14,5	23,4%	323	14	82,9	17,1%
Public body (excl.research and education) (PUB)	5	1	1,8	3,0%	58	5	6,6	1,4%
Research organisations (REC)	35	6	14,6	23,5%	494	63	188,3	38,9%
Total	213	33	61,9	100,0%	1445	205	484,3	100,0%

The following diagram compares the weight of the different types of participants in the region to the national average.

Figure 18 Participation typology-graphical comparison between national and regional profile (acc. EC contrib. distribution)



The table below presents the distribution of participants by legal type (private/public).

Table 28 Distribution of participations according the legal type-comparison between regional and national level

	Private organisations	West Finland		Finlande	
		nbr	EC contrib (mlnEUR)	nbr	EC contrib (mlnEUR)
Private	PRC	65	14,5	323	82,9
	PNP	30	8,1	190	58,2
	<i>total private</i>	95	22,6	513	141,0
Public	Commercial	3	0,3	12	1,3
	PNP	115	39,1	921	341,9
	<i>total public</i>	118	39,4	933	343,2
	TOTAL	118	39,4	1 446	484,3

SME participation

This section aims to give an overview on the participation of SMEs in the FP7. The following table presents the levels of participation of SMEs at the infra-regional, regional, national and European level.

Table 29 Number of funded SME

	Total West Finland	Total Finland	Total FP	F1193	F1194	F1195	F1196	F1197
Nbr of participations in projects	39	183	11 545	7	1	7	1	23
EC contribution (mlnEUR)	8,70	43 965 295	2 873,56	1,03	0,03	0,80	0,32	6,53

The table below presents the distribution of SME participations according to their legal status (private profit and non-profit organisations).

Table 30 Distribution of SME among private profit and private non profit organisations

	West Finland		Finland	
	Nbr	EC Contrib (mlnEUR)	Nbr	EC Contrib (mlnEUR)
PRC	39	8,70	171	40,68
PNP			12	3,29
TOTAL	39	8,7	183	44,0

Regional participation among themes and activities of the programme

This section aims at providing information regarding the specialisation of the regions according to participations across FP7 themes. The level of specialisation of the region can be measured by comparing the levels of participation for each theme to the national and European averages.

Table 31 Participations among FP7 themes and activities-comparison of the distribution at Programme level, national level and regional level

N°	PROG SPEC	Theme	FP		Finland		West Finland	
			nbr	EC contrib	nbr	EC contrib	nr	EC contrib mEUR
1	COOPERATION	Health	6 580	38 311,7	131	57,4	15	8,4
2	COOPERATION	Food, Agriculture, and Biotechnology	3 611	12 817,9	84	27,9	3	0,7
3	COOPERATION	Information and Communication Technologies	13 492	58 405,4	325	105,5	34	7,4
4	COOPERATION	Nanosciences, Nanotechnologies, Materials and new Production Technologies	4 881	23 146,4	140	52,7	32	11,3
5	COOPERATION	Energy	2 378	11 337,3	53	28,2	11	4,7
6	COOPERATION	Environment (including Climate Change)	4 592	17 622,4	75	19,5		0,0
7	COOPERATION	Transport (including Aeronautics)	5 445	33 527,7	78	17,9	18	5,6
8	COOPERATION	Socio-economic sciences and Humanities	1 515	3 354,2	38	13,7	10	2,4
9	COOPERATION	Security	1 590	8 610,5	45	13,6	4	0,5
10	COOPERATION	Space	1 449	8 715,6	46	11,2	10	3,6
11	COOPERATION	General Activities (Annex IV)	148	518,7	10	8,5		0,0
12	IDEAS	European Research Council	2 269	3 639,4	38	58,1	4	5,9

1 3	PEOPLE	Marie-Curie Actions	9 470	10 482,6	127	20,9	20	4,3
1 4	CAPACITIES	Research Infrastructures	3 921	24 495,1	88	22,2	8	1,6
1 5	CAPACITIES	Research for the benefit of SMEs	4 485	5 835,4	60	7,2	13	1,5
1 6	CAPACITIES	Regions of Knowledge	588	807,7	27	3,6	9	1,4
1 7	CAPACITIES	Research Potential	239	263,1	1	0,2		0,0
1 8	CAPACITIES	Science in Society	1 125	1 997,3	22	2,6	5	0,6
1 9	CAPACITIES	Coherent development of research policies	100	107,9	3	0,1	2	0,1
2 0	CAPACITIES	Activities of International Cooperation	584	1 038,1	7	1,0	1	0,2
2 1	Euratom	Fusion Energy	64	129,6	2	0,1	1	0,1
2 2	Euratom	Nuclear Fission and Radiation Protection	1 236	4 136,2	46	12,0	13	1,8
		TOTAL	69 762	22 189,5	1 446	484,3	21 3	61,9

Intraregional indicators

This section presents an overview the participation of infra-regional territories in FP7.

The following table presents a general overview of the distribution of participations, coordinations and EC contribution within the region (at Nuts n-1). The higher concentration of participation within specific territories usually reflects the presence of a stronger number of research organisations.

Table 32 distribution of the funded participations and EC contribution within the territory

	FI193	%	FI194	%	FI195	%	FI196	%	FI197	%	Total West Finland	%
Nbr of participations in projects	47	22%	6	3%	22	10%	10	5%	128	60%	213	100%
Nbr of coordinations	8	24%	2	6%	1	3%	1	3%	21	64%	33	100%
EC contribution (€Mln)	12,3	20%	2,3	4%	4,3	7%	2,4	4%	40,6	66%	61,9	100%

The following table gives presents a break-down of infra-regional participations according to participant types (HES, OTH, PRC, PUB, REC).

Table 33 Intra regional participations and participation profile according the activity type

FI193 Keski-Suomi				
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mInEUR)	%
HES	33	7	8,9	71,8%
OTH	1		0,1	0,9%
PRC	9		1,3	10,3%
PUB	1		0,1	1,0%
REC	3	1	2,0	16,0%
Total	47	8	12,3	100,0%
FI194 Etelä-Pohjanmaa				
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mInEUR)	%
HES	2	2	0,3	13,0%
OTH	1		0,3	13,5%
PRC	1		0,0	1,2%
PUB	2		1,6	72,3%
REC			0,0	0,0%
Total	6	2	2,3	100,0%
FI195 Pohjanmaa				
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mInEUR)	%
HES	6		1,3	29,1%
OTH			0,0	0,0%
PRC	14		3,0	68,9%
PUB	2	1	0,1	2,1%
REC			0,0	0,0%
Total	22	1	4,3	100,0%
FI196 Satakunta				
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mInEUR)	%
HES			0,0	0,0%
OTH			0,0	0,0%
PRC	10	1	2,4	100,0%
PUB			0,0	0,0%
REC			0,0	0,0%
Total	10	1	2,4	100,0%

	FI197 Pirkanmaa			
Participant type	Nbr of participations in projects	Nbr of coordinations	EC contribution (mlnEUR)	%
HES	65	14	20,2	49,8%
OTH			0,0	0,0%
PRC	31	2	7,8	19,2%
PUB			0,0	0,0%
REC	32	5	12,6	31,0%
Total	128	21	40,6	100,0%

The following table presents the distribution of infra-regional participations by FP7 themes.

Table 34 Participations among FP7 themes and activities at intra regional level (Nuts n-1)

Num	PROG SPEC	Theme	FI193		FI194		FI195		FI196		FI197	
			nbr	EC contr (mlnEUR)	nbr	EC contr (mlnEUR)	nbr	EC contr (mlnEUR)	nbr	EC contr (mlnEUR)	nbr	EC contr (mlnEUR)
1	COOP	Health	15	8,4	1	0,6		0,0		0,0		0,0
2	COOP	Food, Agriculture and Fisheries, and Biotechnology	3	0,7		0,0	1	0,2		0,0		0,0
3	COOP	Information and Communication Technologies	34	7,4	8	1,5	1	0,2	3	0,5	1	0,3
4	COOP	Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	32	11,3		0,0		0,0	5	1,0	1	0,3
5	COOP	Energy	11	4,7	6	2,2	2	1,7	1	0,0	1	0,5
6	COOP	Environment (including Climate Change)		0,0		0,0		0,0		0,0		0,0
7	COOP	Transport (including Aeronautics)	18	5,6		0,0		0,0	5	1,7		0,0
8	COOP	Socio-economic sciences and Humanities	10	2,4	4	0,9		0,0	1	0,4		0,0
9	COOP	Space	4	0,5	2	0,2		0,0		0,0		0,0
10	COOP	Security	10	3,6	1	0,4		0,0		0,0		0,0
11	COOP	General Activities		0,0		0,0		0,0		0,0		0,0
12	CAPACITIES	Research Infrastructures	4	5,9	2	2,0		0,0		0,0		0,0
13	CAPACITIES	Research for the benefit of SMEs	20	4,3	4	1,3		0,0	2	0,2		0,0
14	CAPACITIES	Regions of Knowledge	8	1,6	4	1,2		0,0		0,0		0,0
15	CAPACITIES	Research Potential	13	1,5	3	0,2		0,0	1	0,2		0,0
16	CAPACITIES	Science in Society	9	1,4	6	1,2		0,0	3	0,3		0,0
17	CAPACITIES	Support for the coherent development of research policies		0,0		0,0		0,0		0,0		0,0
18	CAPACITIES	Activities of International Cooperation	5	0,6	2	0,3		0,0	1	0,1		0,0
20	PEOPLE	Marie-Curie Actions	2	0,1		0,0	2	0,1		0,0		0,0
21	IDEA	European Research Council	1	0,2	1	0,2		0,0		0,0		0,0
22	EURATOM	Fusion Energy	1	0,1		0,0		0,0		0,0		0,0
23	EURATOM	Nuclear Fission and Radiation Protection	13	1,8	3	0,2		0,0		0,0	7	1,3
		TOTAL	213	61,9	47	12,3	6	2,3	22	4,3	10	2,4

International cooperation

This section aims at giving an overview of the main partners and collaboration themes of the focused region at the European level. The following indicators have been calculated on the basis of all projects including at least one participant from the focused region.

The following table presents the partner regions of the focused region.

Table 35 Partner regions

Partner region	Nb of participations	% of total
Ile de France	103	4,8%
Etelä-Suomi	97	4,5%
Bayern	61	2,8%
Comunidad de Madrid	58	2,7%
Nordrhein Westfalen	56	2,6%
Baden-Württemberg	52	2,4%
Lombardia	45	2,1%
Cataluna	44	2,0%
Stockholm	42	1,9%
South East England	39	1,8%
London	34	1,6%
Attiki	32	1,5%
Zuid-Holland	29	1,3%
Vlaams Gewest	29	1,3%
Bucuresti - Ilfov	28	1,3%

The table below presents the main partner organisations of the focused region.

Table 36 Partner organisations

Partner organisation	Nb participations	% of total
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	23	1,1%
COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	20	0,9%
TEKNOLOGIAN TUTKIMUSKESKUS VTT	18	0,8%
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	18	0,8%
HELSINGIN YLIOPISTO	12	0,6%
JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION	11	0,5%
DANMARKS TEKNISKE UNIVERSITET	10	0,5%
NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK - TNO	10	0,5%
UPPSALA UNIVERSITET	9	0,4%
FUNDACION TECNALIA RESEARCH & INNOVATION	8	0,4%
Eidgenössische Technische Hochschule Zürich	8	0,4%
MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V.	8	0,4%
Karlsruher Institut fuer Technologie	8	0,4%
TARTU ULIKOOL	7	0,3%
POLITECNICO DI MILANO	7	0,3%

The following table provides the most frequent European coordinators of participants from the focused region in FP7.

Table 37 The main coordinators of regional participants

FREQUENT COORDINATORS	Nb coordinations
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	6
TEKNOLOGIAN TUTKIMUSKESKUS VTT	5
ASTON UNIVERSITY	3
NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK - TNO	2
TECHNISCHE UNIVERSITEIT EINDHOVEN	2
SVENSK KARNBRANSLEHANTERING AB	2
Eidgenössische Technische Hochschule Zürich	2
VOLVO TECHNOLOGY AB	2
THE UNIVERSITY OF SHEFFIELD	2
HELSINGIN YLIOPISTO	2
INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	2
KAROLINSKA INSTITUTET	2
RECORE SYSTEMS B.V.	1
UNIVERSITEIT ANTWERPEN	1
ACCIONA ENERGIA S.A.	1
CENTRALNY INSTYTUT OCHRONY PRACY - PANSTWOWY INSTYTUT BADAWCZY	1

Annex 3 – CIP ICT participation scoreboard

I. FI19 in CIP ICT PSP	FI19	FI	CIP ICT PSP	% of FI19 in FI	% of FI in CIP ICT
Nbr of participations in projects	2	48	2141	4,2%	2,2%
Nbr of coordinations	0		128		0,0%
EC contribution	468 137	6 487 664	304 167 499	7,2%	2,1%

II. Participant Typology/or organisation type	FI19				FI				CIP ICT PSP			
	Nbr of participations in projects	Nbr of coordinations	EC contribution	%	Nbr of participations in projects	Nbr of coordinations	EC contribution	%	Nbr of participations in projects	Nbr of coordinations	EC contribution	%
HES				0,0%	14		2 002 316	30,9%	345	14	48 931 144	16,1%
OTH				0,0%	5		249 775	3,8%	230	14	33 768 401	11,1%
PRC	1		250125	53,4%	13		1 090 381	16,8%	835	78	116 503 789	38,3%
PUB	1		218012	46,6%	9		2 450 968	37,8%	425	26	67 392 659	22,2%
REC				0,0%	7		694 224	10,7%	306	22	37 571 506	12,4%

Total	2	0	468 137	10 0%	48	0	648766 4	10 0%	2141	154	304167 499	10 0%
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III. Participant Typology/Public-Private organisations	FI19			FI			CIP ICT PSP		
	Nbr of participations in projects	EC contribution	%	Nbr of participations in projects	EC contribution	%	Nbr of participations in projects	EC contribution	%
Private commercial (PRC)	1	250 125	53,4 %	13	1 090 381	16,8 %	842	117 814 939	38,7 %
Private non Profit (PNP)			0,0%	10	1 078 228	16,6 %	442	56 873 668	18,7 %
Total Private organisations	1	250125	53,4 %	23	2 168 609	33,4 %	1 284	174 688 607	57,4 %
Public Commercial (PUC)	1	218 012	46,6 %	5	365 678	5,6%	120	15 166 682	5,0%
Governmental (GOV)			0,0%	20	3 953 377	60,9 %	737	114 312 210	37,6 %
Total Public organisations	1	218012	46,6 %	25	4 319 055	66,6 %	857	129 478 892	42,6 %
Total	2	468137	100,0%	48	6 487 664	100,0%	2 141	304 167 499	100,0%

IV SME/ legal type	FI19			FI			CIP ICT PSP		
Private commercial (PRC)	1	284 275	100,0%	2	284 275	100,0%	344	49 185 099	76,9%

Private non Profit (PNP)			0,0%			0,0%	59	14 769 538	23,1%
Total	1	284 275	100,0%	2	284 275	100,0%	403	63 954 637	100,0%

Annex 4 – CIP IEE participation scoreboard

I. FI19 in CIP IEE	FI19	FI	CIP IEE	% of FI19 in FI	% of FI in CIP IEE
Nbr of participations in projects	8	44	2443	18,2%	1,8%
Nbr of coordinations	3	8	235	37,5%	3,4%
EC contribution	1 156 765	4 773 111	241 453 630	24,2%	2,0%

Annex 5 – ERDF participation scoreboard

I general information			ERDF allocated	ERDF comitted
Total in euros :			0	0
Innovation and research axis only (n°1) :			0	0
Total projects co-funded :				
Innovation and research axis only (n°1) :				

II Distribution of ErDF fundings within areas related to research and innovation				
Themes	FOI codes	Measures	EC contrib.	EC contrib.

RTDI and linked activities	1	R&TD activities in research centres :	0	5 013 121
	2	R&TD infrastructure and centres of competence in a specific technology :	0	2 608 505
	5	Advanced support services for firms and groups of firms	0	3 999 416
	7	Investment in firms directly linked to research and innovation (...):	0	188 227
	74	Developing human potential in the field of research and innovation, in particular through post-graduate studies (...):	0	4 907 270
Innovation support for SMEs	3	Technology transfer and improvement of cooperation networks (...):	0	14 962 188
	4	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres):	0	2 485 754
	6	Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...):	0	1 995 512
	9	Other measures to stimulate research and innovation and entrepreneurship in SMEs:	0	10 600 330
	14	Services and applications for SMEs (e-commerce, education and training, networking, etc.):	0	589 169
	15	Other measures for improving access to and efficient use of ICT by SMEs:	0	343 698
ICT and related services	11	Information and communication technologies (...):	0	222 384
	12	Information and communication technologies (TEN-ICT):	0	0
	13	Services and applications for citizens (e-health, e-government, e-learning, e-inclusion, etc.):	0	806 776
Other	8	Other investment in firms:	0	9 116 636

IV Impact and output (innovation and research only) :				
Unit	Type of indicators		<u>Amount foreseen</u>	<u>Amount realised</u>
	Output	KASVH - Number of projects aimed at reducing greenhouse emissions		45
	Output	T&IYR - Companies participating on the public research and innovation projects		0
	Output	TA - Projects enhancing equal opportunities		8825379
	Output	TKI - R&D or innovation project	10	20608351
	Output	YMPOS - Environmentally positive projects	17,50	30748299

Result	T&KTP - Number of new R&D jobs	20	189
Result	T&KTP - Number of new R&D jobs	90	62
Result	UY - Number of new enterprises	60	585
Result	UY - Number of new enterprises	1200	408
Core	1 - Jobs created	800	4015
Core	2 - Jobs created for men	9800	2737
Core	3 - Jobs created for women	5880	1278
Core	41 - Number of projects offering services to promote equal opportunities and social inclusion for minorities and young people	3920	139

Annex 5 – Cross thematic table

FP 7 - COOPERATION Theme	EC contribution		COUNTRY		EU	EMPLOYMENT sector	% reg. Emp	Empl. Var. 2004-2009	spec. EU	spec. country	PATENT DOMAIN	n	lib. fields	n° patents	field weight*	country weight**	spec. ***
HEALTH	8.369.946	19%	0,41	0,88	Pharma	0,3%	86	0,3	0,5	CHEM	16	Pharma					
					Med. devices	0,4%	98	0,5	0,6	Instr.	13	Med. Tech					
FOOD	733.228	2%	0,07	0,24	Biotech	0,0%	-31	0,2	1,2	CHEM	15	Biotech					
					Processed food	5,7%	-551	0,9	1,3	CHEM	18	Food chem.					
					FARMING	5,0%	7704	2,2	1,3								
					Agri PRODUCTS	0,2%	24	0,1	0,5								
ICT	7.378.892	17%	0,20	0,43	IT	3,2%	2620	1,4	0,8	Elet.Eng	6	Computer tech.	1,17	8,3%	0,0	0,8	
								Elet.Eng	7	IT	0,33	2,4%	0,0	2,6			
					Telecom	4,3%	-784	1,4	0,7	Elet.Eng	3	Telecomm.					
								Elet.Eng	4	Digital com.	0,50	3,6%	0,0	0,6			
								Elet.Eng	5	Basic com.							
NANO	11.306.640	25%	0,61	2,04	Metal man.	7,6%	2789	1,4	1,3	CHEM	20	Materials .					
					Plastics	0,8%	-398	0,6	0,8								
					Construction M.	12,5%	4738	1,2	1,0								
					Lighting & e.e	1,2%	415	1,9	1,7	Elet.Eng	1	Elec. machinery	4,83	34,5%	0,0	8,3	
								Elet.Eng	2	Audio-visual							
								Elet.Eng	8	Semiconductors							
					Chemical PR.	0,4%	191	2,3	3,2	CHEM	17	Macromolecular					
			CHEM	14	Organic chem.												

										CHEM	19	Basic materials							
										CHEM	21	Surface tech.	0,67	4,8%	0,0	3,7			
										CHEM	22	nano-technology							
										CHEM	23	Chemical eng.							
ENERGY	4.664.713	10%	0,47	1,52	Oil and gas	0,0%	13	0,0	0,0										
					Power g & t	1,0%	54	2,5	1,2										
Environm.										CHEM	24	Envir. Tech.							
Transport	5.635.066	13%	0,89	1,08	Transp & logistics	6,2%	665	0,8	0,7	Mech.Eng	32	Transport	0,67	4,8%	0,0	1,6			
					Automotive	3,1%	371	0,9	2,0										
					Distribution	0,8%	-100	0,3	0,4										
SOCIO	2.361.477	5%	0,49	2,37	Financial services	3,6%	312	0,4	0,6										
					EDU	1,0%	162	0,2	0,8										
					Business services	7,0%	4984	0,8	0,7										
Security	472.598	1%	0,10	0,25															
Space	3.601.210	8%	0,91	2,47	Aerospace	0,5%	314	0,9	3,9										
					FIXTURES	5,1%	2118	1,7	1,6										
					Construction	1,3%	-115	0,4	0,3	Other	35	Civil eng.							
					Prod. TECH	4,2%	268	1,8	1,6										
					Entertainment	0,9%	526	0,5	0,7										
					Heavy Machinery	3,3%	1425	2,9	1,7	Mech.Eng	25	Handling	0,67	4,8%	0,0	0,8			
										Mech.Eng	26	Machine							
										Mech.Eng	27	Engines, ..	0,33	2,4%	0,0	2,4			
										Mech.Eng	29	Other machines	0,33	2,4%	0,0	0,6			
										Mech.Eng	31	Mech. elements	0,33	2,4%	0,0	1,3			
					Maritime	1,3%	394	1,7	1,6	Mech.Eng	30	Thermal							
					Instruments	0,4%	-73	0,7	0,6	Instr.	9	Optics							
										Instr.	10	Measurement	4,17	29,8%	0,0	7,1			
										Instr.	11	bio. Analysis							
										Instr.	12	Control							
					Sporting, recreational and children's goods	0,1%	13	0,2	0,3										
					Textiles	1,3%	97	0,9	2,5	Mech.Eng	28	Textile							
					Media and publishing	2,6%	374	0,9	0,8										
					Tourism and hospitality	3,1%	419	0,7	0,8										
					Paper products	9,2%	-1920	4,5	1,6										
					Furniture	1,4%	-1046	1,0	1,0	Other	33	Furniture							
					Apparel	0,5%	-495	0,2	1,2										
					Jewellery and precious metals	0,0%	16	0,2	0,3										
					Tobacco		-18												
					Leather products	0,1%	-132	0,5	1,7										
					Footwear	0,4%	-279	0,8	2,2										
					Stone quarries	0,0%	-10	0,3	0,6										
										Other	34	Other							

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