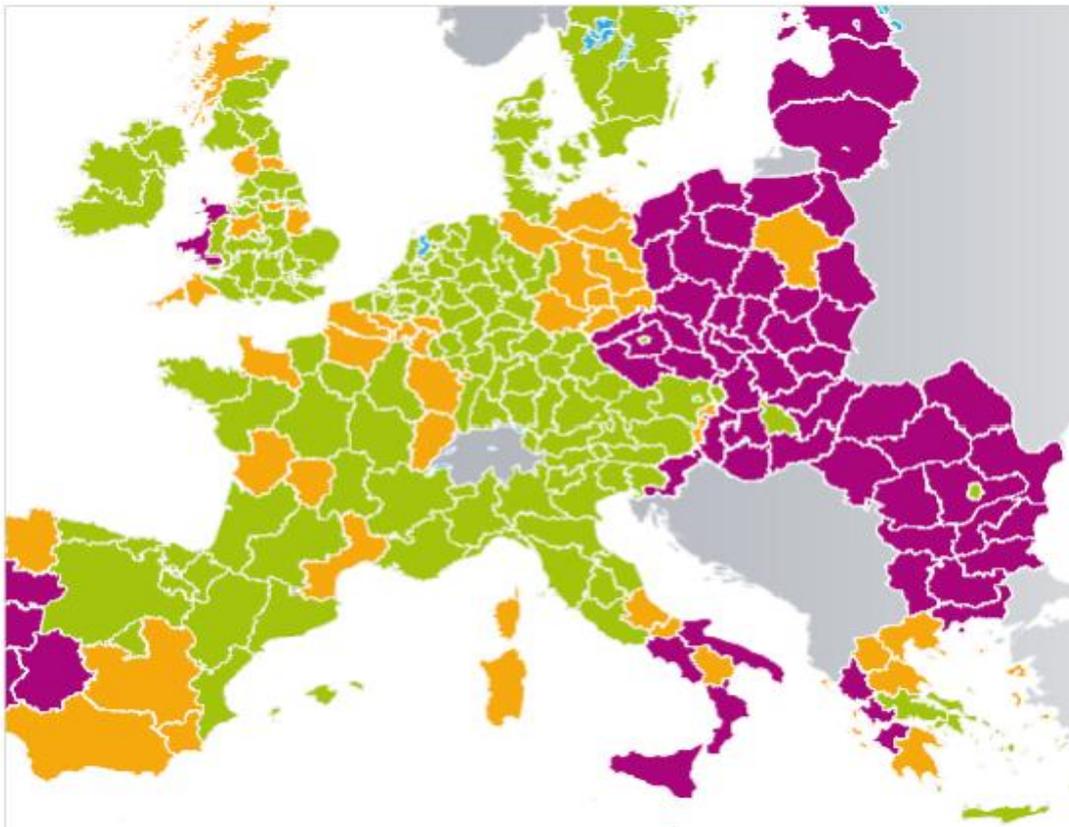# Boosting competitiveness through

"Regional Innovation Strategies"

Regional GDP figures (2007-2009) -Convergence Regions -Transition Regions -More Developed Regions[1]

The authors

Gianluigi Di Bello
FP7 National Contact Point - R&I Regional Dimension
APRE - Agency for the Promotion of European Research

In collaboration with
Ezio Andreta
President
APRE - Agency for the Promotion of European Research

---

[1] GDP/Capita: ≤75 of EU average ; 75-90% ; ≥90%

Table of Contents

Index

Executive Summary

Regional Innovation is more and more considered as a fundamental driver for the economic growth and competitiveness in Europe. The recent studies on innovation and competitiveness (e.g., Innovation Scoreboard, Regional Innovation Monitor, Regional Competitiveness Report etc.) are a clear evidence of the growing interest in measuring and illustrating **relationships between innovation and economic growth at various levels** (regional, national, EU). Such multi-level policies should be considered as central determinants to frame strategies which are smart, inclusive and eventually linked to principles of **sustainability and territorial cohesion**.

This paper will dwell on relevant **factors of competitiveness** in relation **to research and innovation policy framework**. To this aim, some of the weaknesses of the Italian research and innovation system affecting competitiveness will be briefly discussed. Particular emphasis will be put on the concept of **"Smart Specialisation Strategy"**: the new approach put forward by the European Commission[2] to capture R&I priorities and strengths at regional level. The approach strives to reframe the concept of competitive advantage of regions by designing and implementing bottom-up strategies to innovation and policy planning.

Consistently with the concept, EU Regions have been identified as the crucial actors along the Research and Innovation (R&I) policy process. Their role will be anything but trivial. Regional authorities are expected in fact to concentrate public resources on **a few development priorities** in innovation, to **outline measures to stimulate private R&D investment**, build on competitive advantages along their value chain, **foster stakeholder involvement** through an **innovative governance** while supporting **evidence-based policy and programmes** that include a sound **monitoring and evaluation system**.

The main objective of the paper is threefold: 1) to stimulate further discussion among crucial stakeholders such as regional authorities, development agencies, research organisations,

---

[2] DG REGIO.

Universities and SMEs upon regional innovation policies; 2) to contribute to the current consultation process towards the design of synergic innovation strategies at national and regional level; 3) to touch upon the structural weaknesses of the Italian R&I system which affect competitiveness and innovation performance. The paper will conclude the discussion by outlining critical areas which might be worth to consider as delving into regional innovation strategies for smart specialisation:

- ✓ The prospected economic recession put a serious challenge on **the practical implementation of smart specialisation strategies**. On the one hand the smart specialisation approach requires a clear focus on priorities due to public budgetary constraints. On the other hand in order the strategy to be effective, the coordination of public investments through a common effort with the private sector (e.g, Industry-University-Public collaboration) remains a central issue;

- ✓ Public authorities dealing with regional innovation strategies for smart specialisation should find a balance between the quest **to enhance competitiveness and need to ensure territorial cohesion**. Will public regional authorities be able to ensure the achievement of both priorities?;

- ✓ **Regional participation in FP7 shows unbalanced patterns among Italian regions**. Such unbalances should be carefully addressed perhaps by rethinking bridges between the Framework Programme and the Cohesion Policy Funds. Regional innovation strategies for smart specialisation should consider the need to bridge between the two instruments. In particular, it will be fundamental to enhance the dialogue through the promotion of **"Regional Innovation partnerships" (RIP)** which involve all instrumental stakeholders to the implementation of SSS3 strategies.

KEY WORDS: Competitiveness, Research & Innovation, Smart Specialisation Strategy, Seventh Framework Programme, Cohesion Policy, Innovation Scoreboard.

1. Innovation and competitiveness framework in Italy

1.1 A snapshot on the Italian economy

Considering the current context of economic turmoil and recession dynamics, what should be the specific priorities in research and innovation?

The Italian economy had been affected by structural weaknesses long before the global economic and financial crisis. Between 2001 and 2007, average real GDP growth was around 1%, due mainly to **slow productivity growth as well as poor added value in the production of goods and services both in terms of output and outcome**. As these developments affected the whole country, the **large regional economic disparities were not reduced.**

A collapse in exports, and subsequently in investment, produced a sharp contraction of around 7% in real GDP between the second quarter of 2008 and the second quarter of 2009. Government gross debt increased to 120% by end-2010, also reflecting the sharp decline in GDP. Employment declined much less, supported by a government-sponsored scheme to reduce hours worked, and therefore the unemployment rate increased only moderately over 2010-11.
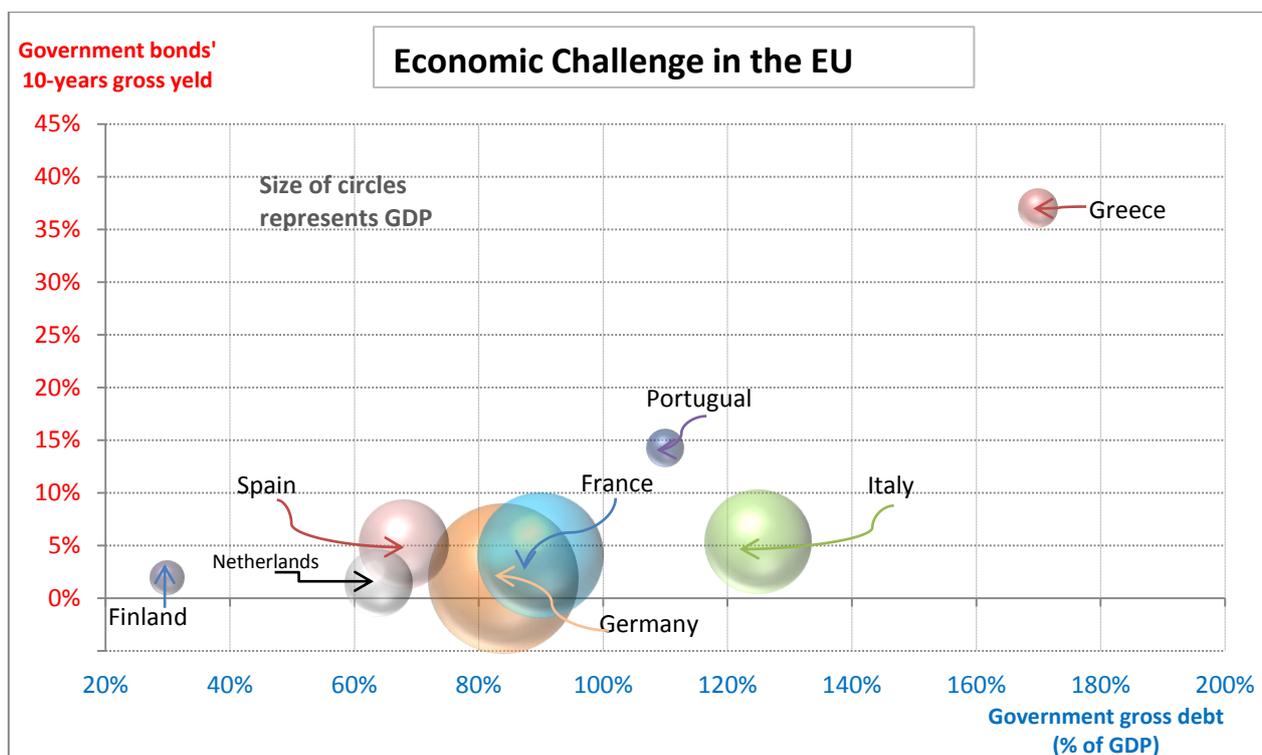
Source: Elaboration on Thomson Reuters data (IMF), Mar. 2012

Given the very high government debt ratio, Italy kept an appropriately prudent fiscal stance during the crisis, refraining from undertaking a large fiscal stimulus, and thus keeping the government deficit below the euro-area average in 2010-11. Despite those measures, considering the combination of a cumbersome government debt and high bonds' interest rate to repay to shareholders, it is evident that **Italy has been dangerously moving away from the "healthier" economies.** The main challenge lies on how to effectively trigger a **radical change in the current economic and social model**, without which it would be extremely complex to boost the competitiveness of the Country.

1.2 A "déjà vu" of the weaknesses of the Italian R&I system

R&D expenditure in Italy had a dismal increase over the past ten years. R&D intensity remains low, at around 1.27% of GDP, and well below the EU average (1.90%). This gap is mainly due to a **low level of industrial research**, as business R&D intensity stands at 0.64% of GDP compared to an EU-27 average of 1.23%. Venture capital intensity also remains very low. A number of measures, including time-limited tax breaks for companies investing in research projects carried out by universities or public-sector entities, have been presented in the NRP[3], but the target of 1.53% of GDP set for R&D intensity is barely above current levels[4].

Looking at innovation performance the overall scenario is rather gloomy. The recent Innovation Union Scoreboard 2012[5] published by the Commission last February dwell on a number of critical dimensions aimed at capturing innovation performance. Out of the four categories identified by the scoreboard (modest innovators, moderate innovators, innovative followers, innovation leaders) Italy ranks 1st among the "**moderate innovators**". Regrettably, the result in neither positive **nor substantial improvements can be reported** compared to the previous year[6]. In

---

[3] National Reform Programme.
[4] Council Recommendation on the National Reform Programme of Italy, 7.06.2011 Brussels.
[5] http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/index_en.htm
[6] Italy stood basically at the same position in the Innovation Union Scoreboard 2010.

addition, the recent measures to support the transition towards a knowledge economy seems to have had no real impact on the Italian system as a whole.
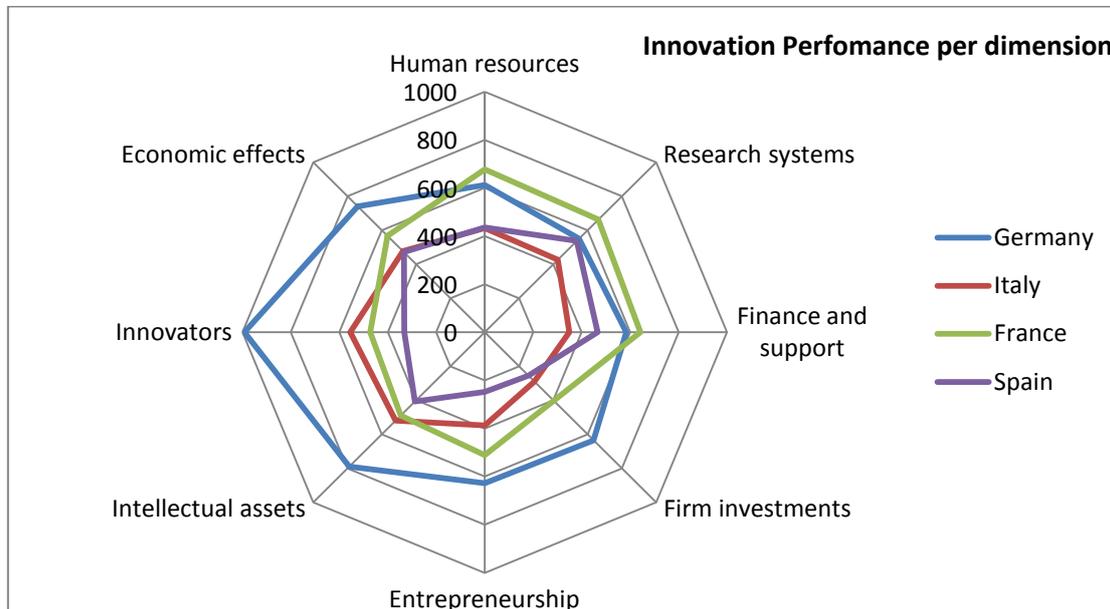
0 = lowest score;   1000 = highest score

Source: Elaboration on Innovation Union Scoreboard data 2012.

According to the specific indicators, Italy has relative strengths[7] in "Intellectual assets" and "innovator" dimension whereas firm **investments**, **entrepreneurship and finance and support are clearly the weakest points**. As to performance growth (2007-2011) it is worth noting that a steady decrease has affected in particular "venture capital" and "non R&D innovation expenditure". The inverse process applies to the "innovators" category in which Italy has better performance compared to countries such as France and Spain. The "innovators" dimension should be a clue of the unexploited potential hidden in the Italian innovation system. Yet, the less performing categories (i.e, venture capital, firm investment, finance and support, competitive research system) underpinning the innovation process have most likely been slowing down improvements in innovation performance throughout these years.

---

[7] Considering "Innovators" and "Intellectual Assets" dimension , Italy seems to have a moderate advantage compared to France and Spain. Germany is however far ahead in terms of performance within those dimensions.

1.3 R&I beyond the European Union

A comparison between the EU27 with a group of global competitors shows that the US, Japan and South Korea still maintain some advantages in innovation related areas. The performance has been increasing for South Korea, has remained stable for the US and has been decreasing for Japan. The global innovation leaders US and Japan are particularly dominating the EU27 in **business activity and public-private cooperation**: 'R&D expenditure in the business sector', 'Public-private co-publications', 'License and patent revenues from abroad' and 'PCT patent applications'. The EU27 has a performance lead over Australia, Canada and all BRICS countries (Brazil, Russia, India, China and South Africa). However, **China has been closing the innovation gap to Europe** continuously in the last few years[8].

The BRICS countries are rapidly catching up with Europe both in terms of performance innovation as well as in innovation/world output.

IMF FORECASTS — Overview of world economic outlook (Percentage change)	Actual 2010	Actual 2011	Latest projections 2012	Latest projections 2013	Change from Sept '11 projections +/-	Change from Sept '11 projections +/-
World output	5.2	3.8	3.3	3.9	−0.7	−0.6
Advanced economies	3.2	1.6	1.2	1.9	−0.7	−0.5
U.S.	3.0	1.8	1.8	2.2	0.0	−0.3
Euro area	1.9	1.6	−0.5	0.8	−1.6	−0.7
Germany	3.6	3.0	0.3	1.5	−1.0	0.0
France	1.4	1.6	0.2	1.0	−1.2	−0.9
Italy	1.5	0.4	−2.2	−0.6	−2.5	−1.1
Spain	−0.1	0.7	−1.7	−0.3	−2.8	−2.1
Japan	4.4	−0.9	1.7	1.6	−0.6	−0.4
Britain	2.1	0.9	0.6	2.0	−1.0	−0.4
Canada	3.2	2.3	1.7	2.0	−0.2	−0.5
Other Advanced Economies	5.8	3.3	2.6	3.4	−1.1	−0.3
Newly Industrialised Asian Economies	8.4	4.2	3.3	4.1	−1.2	−0.3
Emerging and Developing Economies	7.3	6.2	5.4	5.9	−0.7	−0.6
Central and Eastern Europe	4.5	5.1	1.1	2.4	−1.6	−1.1
Commonwealth of Independent States	4.6	4.5	3.7	3.8	−0.7	−0.6
Russia	4.0	4.1	3.3	3.5	−0.8	−0.5
Excluding Russia	6.0	5.5	4.4	4.7	−0.7	−0.4
Developing Asia	9.5	7.9	7.3	7.8	−0.7	−0.6
China	10.4	9.2	8.2	8.8	−0.8	−0.7
India	9.9	7.4	7.0	7.3	−0.5	−0.8
ASEAN-5*	6.9	4.8	5.2	5.6	−0.4	−0.2
Latin America and the Caribbean	6.1	4.6	3.6	3.9	−0.4	−0.2
Brazil	7.5	2.9	3.0	4.0	−0.6	−0.2
Mexico	5.4	4.1	3.5	3.5	−0.1	−0.2
Middle East and North Africa	4.3	3.1	3.2	3.6	-	-
Sub-Saharan Africa	5.3	4.9	5.5	5.3	−0.3	−0.2
South Africa	2.9	3.1	2.5	3.4	−1.1	−0.6

* Indonesia, Malaysia, Philippines, Thailand and Vietnam
Source: IMF

REUTERS

Source: IMF, Thomson Reuters, 2012.

---

[8] *ec.europa.eu/enterprise/policies/innovation/files/ius-2011_en.pdf*

Projections of the world economic outlook provided by the IMF show a slow decline of the economic output in some of the EU countries while the BRICS keep their run at an average of 5% in terms of economic growth. Fast growing economy, rising innovation performance, leading world output and optimistic forecast should probably suggest us to look carefully into the future role of the BRICS countries along the competition path with Europe. Relevant strategies currently under scrutiny in the EU such as regional research and innovation strategies[9] should fully explore potential ways to integrate and synergize with the BRICS from the very outset.

1.4 Competitiveness vs. Italy

The global competitiveness index[10] 2011-12 ranks Italy in the 43rd place (out of 142 countries).

| COUNTRY (142)	Rank 2011- 12	Rank 2010 -11
Switzerland	1	1
Singapore	2	3
Sweden	3	2
Finland	4	7
United States	5	4
Germany	6	5
Netherlands	7	8
Denmark	8	9
Japan	9	6
United Kingdom	10	12
Hong Kong SA	11	11
Canada	12	10
Taiwan, China	13	13
Qatar	14	17
Belgium	15	15
Norway	16	14
Saudi Arabia	17	21
France	18	15
Austria	19	18
Australia	20	16
Italy	43	48

Source: World Economic Forum "Global Competitiveness Index 2011-2012".

The weak positioning of Italy is the result of a mix of performance indicators which have been the basis for constructing categories such as "quality of Institutions, infrastructures,

---

[9] The EU Framework Programme for R&I "Horizon 2020", Regional Innovation Strategies for Smart Specialisation.
[10] World Economic Forum, Global Competitiveness Index 2011-12.

macroeconomic environment, goods market efficiency, labour and financial market, business sophistication and innovation. Considering **research and innovation indicators**, Italy does not reach satisfactory levels of development[11] in four performance indicators: quality of scientific research institutions[12], **company spending on R&D**, **university-industry collaboration** and **government procurement of advanced tech products**.
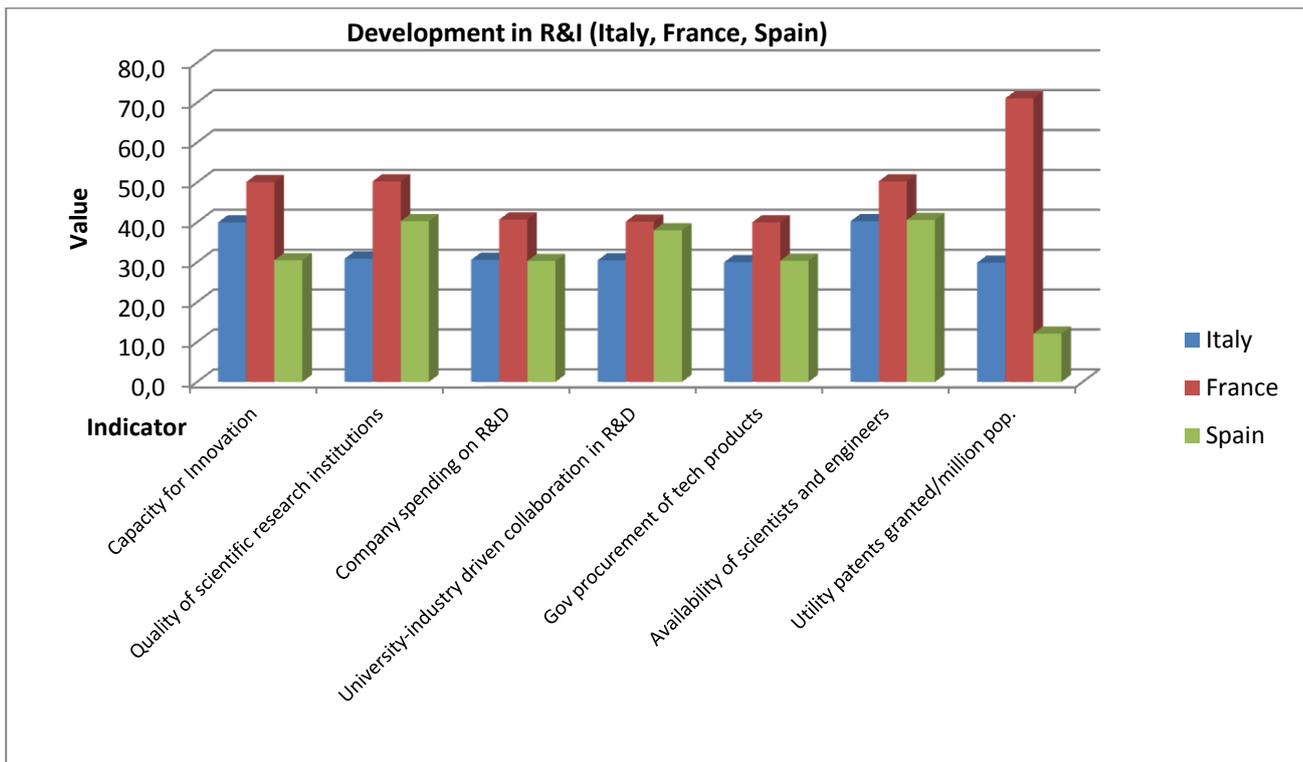
Source: Elaboration on "Global Competitiveness Index 2011-2012", World Economic Forum.

Figures from the above chart are consistent with the data presented in the Innovation Union Scoreboard 2012. The comparative analysis highlights in both documents the crucial issues connected to the **low level of firm investments and lack of finance and support in R&I.** Those issues require long-term strategies in order to achieve levels of private investments in R&I in line with the EU average.

---

[11] Taking into account average among top 20 countries.
[12] This category includes indicators such as Intellectual Property Protection, diversion of public funds, etc.

Another challenge for Italy is likely to be related to how practically set up an efficient framework for the implementation of **public-private procurement schemes** (PPP). Data from the "Global Competitiveness Report 2011" clearly stress the insufficient utilization of **government procurement** for technological products. Public procurement can systematically drive demand for innovation in goods and services while at the same time the purchase of innovative products encourage suppliers to generate top technologies that represent source of innovation in commercial applications[13]. The generation of solid expertise to implement **"value for money" procurement schemes** (public-private, public-public, pre-commercial) will be an important issue to be tackled by national and regional governments in due time.

2. Bottom Up Innovation: "Smart Specialisation Strategy"

Why do we need a Smart Specialisation Strategy?

The ambitious objectives set down by Europe 2020 Strategy can only be achieved through a structural change in which the coordination and implementation of policy and related instruments goes hand by hand.

Public finances have been certainly not immune to the effect of the economic crisis. They deteriorated dramatically during the last three years. As previously mentioned, public deficits rose to -7% of the average EU-27 GDP in 2009 and public debt leapt from 61.6% in 2008 to 73.6% in 2009. Moreover, this deterioration is likely to further deepen in many countries in 2011-12 even if with significant differences between Member States[14].

Given the economic context, the quest to comply with public budgetary constraints coupled with the need to strengthen efficient public administrations able to priorities and deliver results has become more stringent. This has prompted the European Commission to explore diversified approaches to regional economic growth. Among those, **regional innovation strategies for**

---

[13] H. Chesbrough - W. Vanhaverbeke, Open Innovation and Public Policy, December 2011.
[14] DG Regional Policy, Working Paper, 2010.

smart specialisation have been identified as a potential "window" to support the development of a knowledge and innovation economy through targeted Structural Funds support. The new proposed strategy "SSS3[15]" aims to increase the degree of **commitment and accountability** of both regional governments and relevant stakeholders by triggering a bottom up approach to innovation. Simultaneously, it strives to clearly define priorities, future needs opportunities and challenges focusing on regional specifications.

2.1 Regional Innovation Strategies for Smart Specialisation

As a starting point, it might be worth shading some lights on the main ideas behind *regional innovation strategies for smart specialisation*. The concept has gained large interest among innovation policy-makers and regional research managers. Yet, it should be noted the approach is anything but new.

Considering the *rationale*, the concept of *"Smart Specialisation"* is consistent with the Europe 2020 strategy[16] for a smart, sustainable and inclusive growth, the Innovation Union flagship[17] and the Communication on "Regional Policy contributing to smart growth in Europe[18]".

Why "SMART"? The meaning of "SMART"[19] can be referred to a general strategic planning framework, according to which a SMART approach (**S**ustainable, **M**easurable, **A**ttainable, **R**esults based, **T**ime based) in terms of goals/activities/indicators is deemed necessary to ensure the successful achievement of strategic objectives.

Why "Specialisation"? The scope is to drive regions and innovation policy towards the most valuable/competitive assets upon which to develop competitive strategies and market niches.

Common Strategic Framework (CSF) for R&I and Cohesion Policy "Targeting Structural Funds support in Research and Innovation": beyond the generic value proposition, the development of

---

[15] Smart Specialisation Strategy: http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm
[16] http://ec.europa.eu/europe2020/index_en.htm.
[17] http://ec.europa.eu/research/innovation-union/index_en.cfm
[18] http://ec.europa.eu/regional_policy/information/pdf/brochures/rfec/2011_smart_growth_en.pdf
[19] SMART: Sustainable, Measurable, Attainable, Results based, Time based.

Smart Specialisation Strategies at national or regional level has been identified as an ex ante conditionality[20] to be fulfilled by Member States and Regions before the Structural Funds can be implemented. In this respect, SSS3 strategies should work with the CSF for research and innovation in a complementary and synergistic way. The "RIS3" report[21] recently published by the Commission sketched out the rationale, methodologies and main phases to frame smart specialisation strategies. However, the identification of operational instruments bridging between the two CSFs (Research and Innovation & Cohesion Policy) is still part of a conceptual exercise[22].

Considering the literature on regional economic growth and business innovation strategy, references to the cluster theory of Michael Porter should be made. His micro-economically based theory of national, state and local competitiveness was often referred to a context of global economy (Porter 1990) where the formation of **regionally-based distinctive assets** are a manifest benefit for competitiveness and innovation performance frameworks.

Further authors delve into regional competitiveness factors building upon the concept of competitive advantage. This is the case of Stimson-Roberts-Stough[23] who anticipate the main pillars behind the concept of regional strategies for smart specialisation.

The following *flow chart* provides a categorization of the relevant phases in designing a smart specialisation strategy. The chart is built on the strategic planning model proposed by Stimson, Roberts, Stough. The model has been fully integrated with the main phases towards the development of regional innovation strategies for smart specialisation.
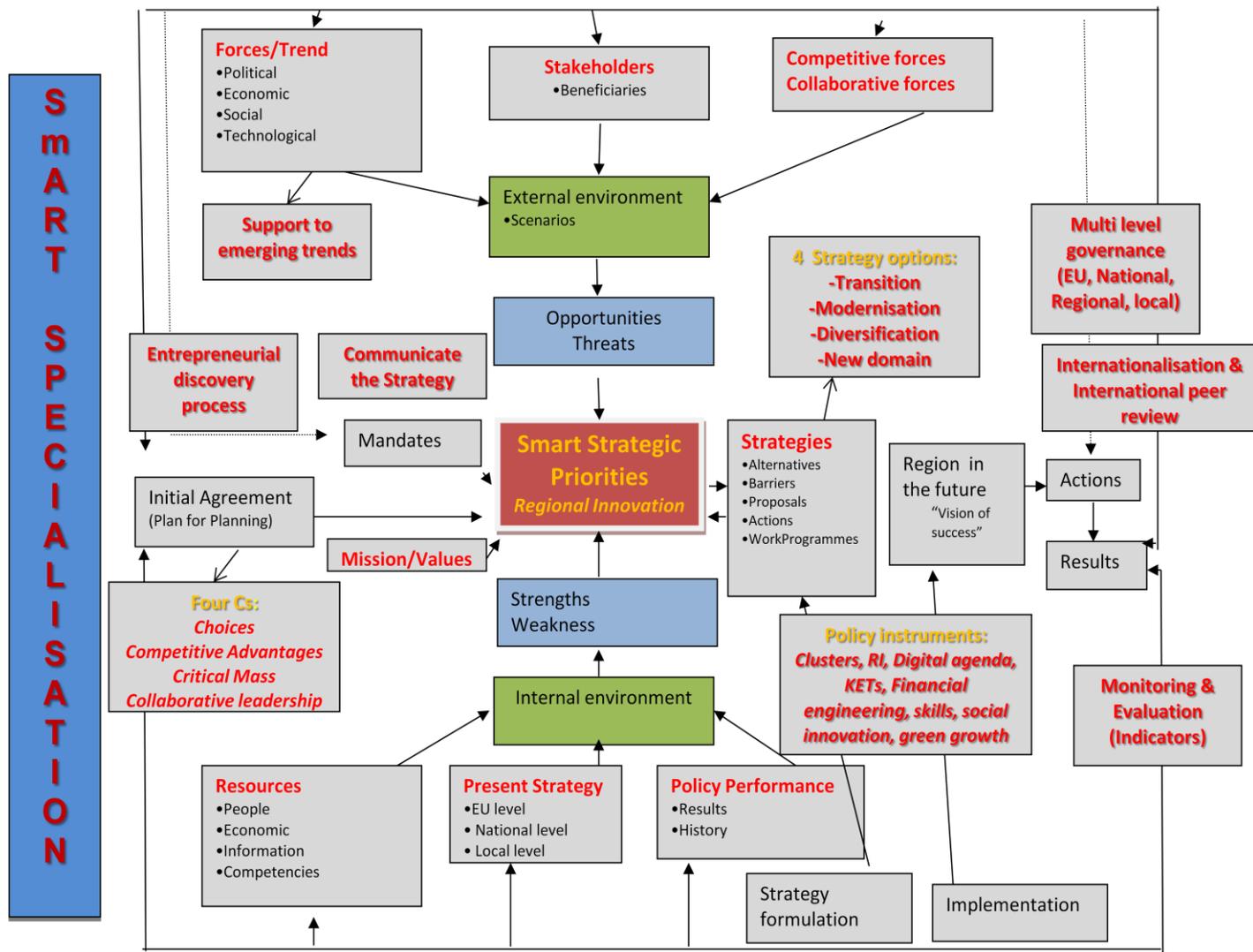
---

[20] The conditionality applies to R&I and ICT target.
[21] http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/documents/guide/draft_12_12_2011.pdf
[22] http://ec.europa.eu/regional_policy/what/future/index_en.cfm
[23] Regional Economic Development: Analysis and Planning Strategy, Springer, 2006.

SMART SPECIALISATION

Forces/Trend
• Political
• Economic
• Social
• Technological

Stakeholders
• Beneficiaries

Competitive forces
Collaborative forces

Support to emerging trends

External environment
• Scenarios

4 Strategy options:
-Transition
-Modernisation
-Diversification
-New domain

Multi level governance (EU, National, Regional, local)

Entrepreneurial discovery process

Communicate the Strategy

Opportunities
Threats

Internationalisation & International peer review

Mandates

Smart Strategic Priorities
Regional Innovation

Strategies
• Alternatives
• Barriers
• Proposals
• Actions
• WorkProgrammes

Region in the future
"Vision of success"

Actions

Initial Agreement
(Plan for Planning)

Mission/Values

Results

Four Cs:
Choices
Competitive Advantages
Critical Mass
Collaborative leadership

Strengths
Weakness

Policy instruments:
Clusters, RI, Digital agenda, KETs, Financial engineering, skills, social innovation, green growth

Monitoring & Evaluation (Indicators)

Internal environment

Resources
• People
• Economic
• Information
• Competencies

Present Strategy
• EU level
• National level
• Local level

Policy Performance
• Results
• History

Strategy formulation

Implementation

A Strategic Planning Model for Smart Specialisation Strategies.

From this perspective, it is clear that no real novelties has occurred in comparison to former strategic planning models.

The main emphasis should be however put on three relevant considerations: 1) Firstly, the Smart Specialisation Strategy is relatively new in the fact of its bottom-up approach to the design of **regional innovation strategies**. Strategies should be networked globally through **clusters, open government, networks, interoperability services**, **institutions for collaboration**. The micro level approach to governance is aimed to foster a wider stakeholder participation, to enhance **accountability mechanisms** while **connecting innovation policies** in consideration of **place-based factors**; 2) Secondly, the approach stresses the role of **entrepreneurship at the basis of the strategy**. In fact, the approach is often referred to as an "entrepreneurial discovery

14

process" which should be able to reveal what a specific region does best in terms of R&D and innovation. In the same way, Universities are supposed to be instrumental into the SSS3 process: they should encourage **connectivity at territorial level** as well as **to advise regional public and private sector**[24]; 3) As a third point, the concept of Smart Specialisation is an attempt to delve into **correlations between innovation and competitiveness**. Figures from the Commission on "*Regional Innovation Scoreboard 2010*" and "*Regional Competitiveness index 2010*" show interesting similarities (i.e., relation between Innovation & Competitiveness) as highlighted in the following graphs:
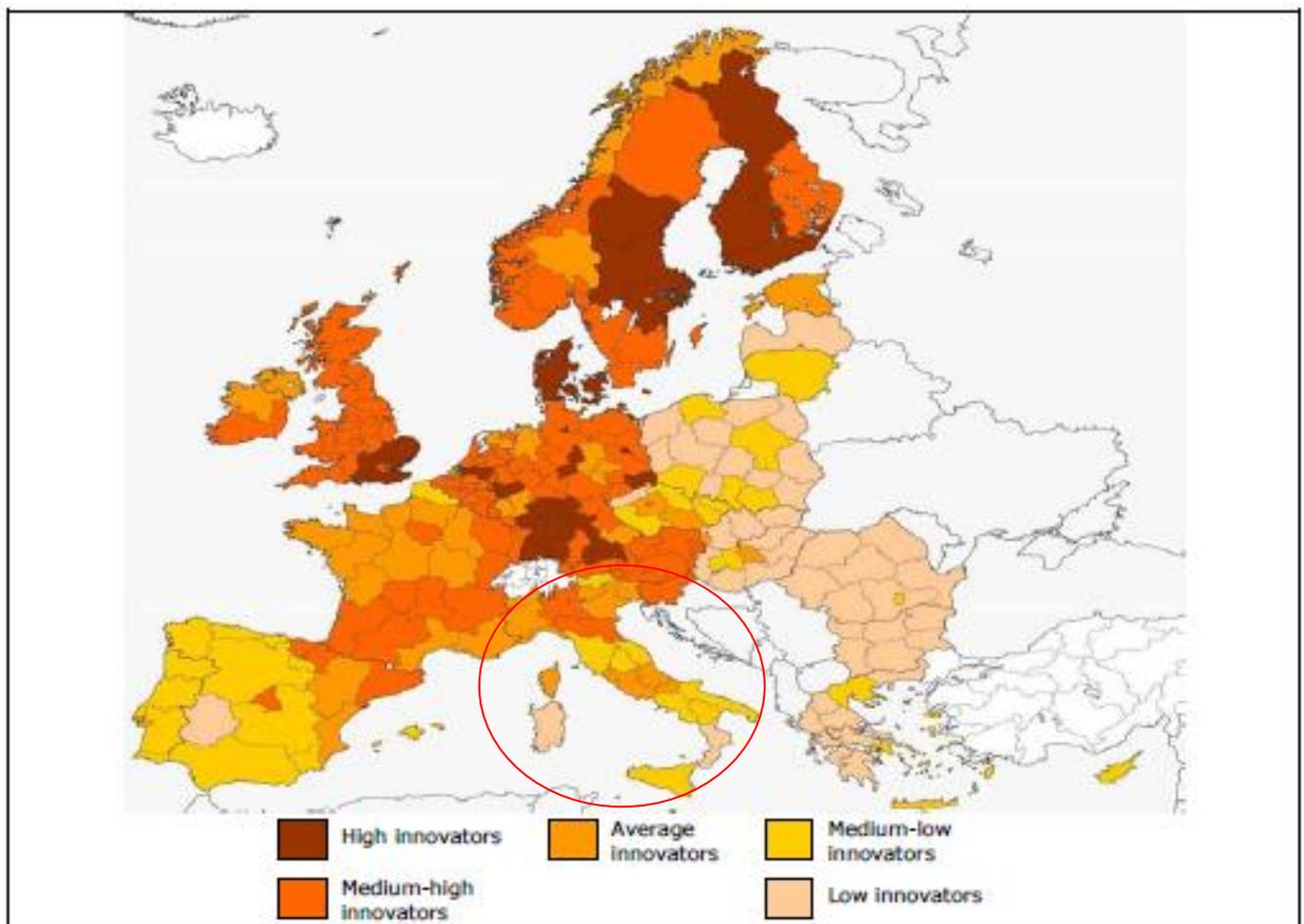
Source: Regional Innovation Scoreboard 2010.

---

[24] Industry - University joint regional action programmes, curricula design, strategic advice to public authorities.

Looking at the micro level, it is evident that in a significant number of cases the **"high innovators"** regions have a higher score in terms of **competitiveness index** as shown in the below chart:
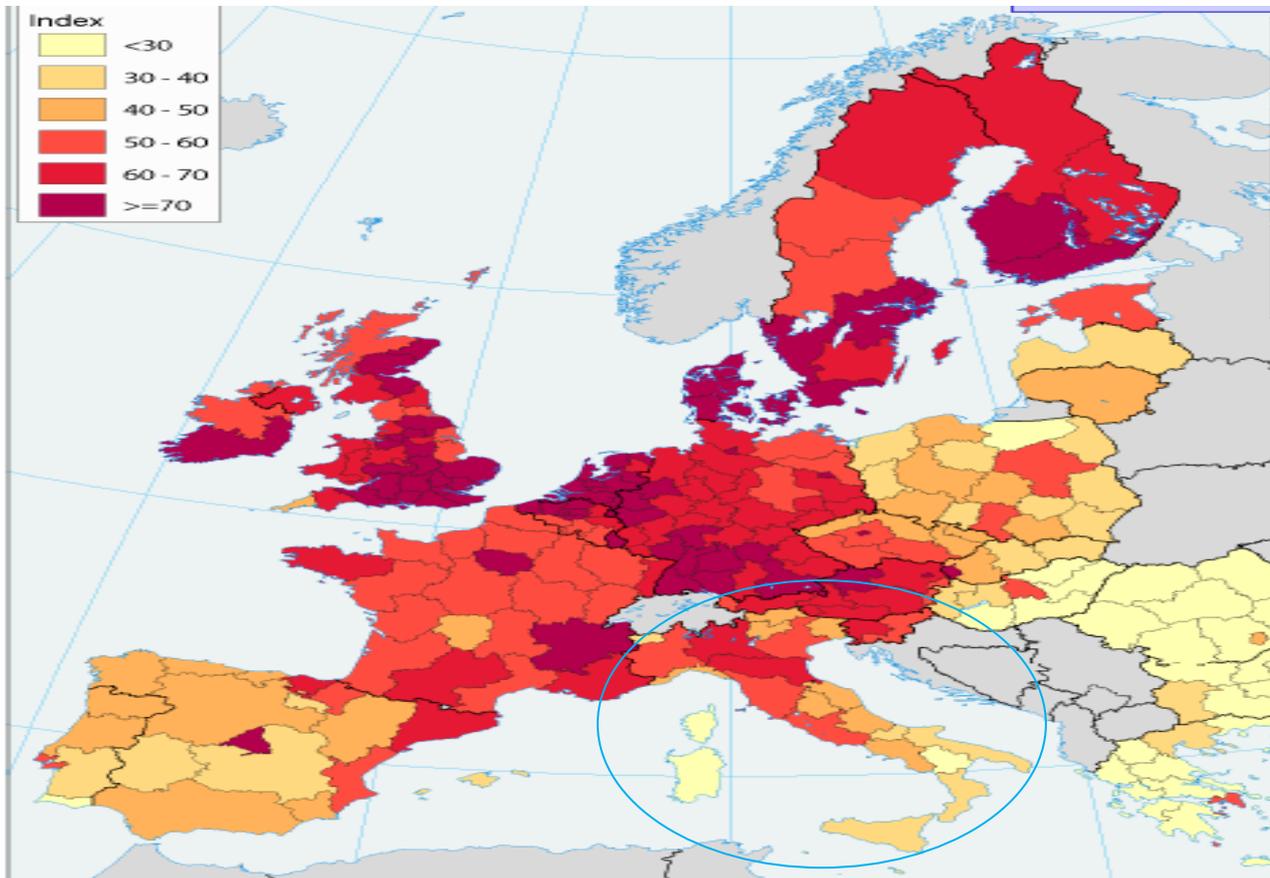
Source: Regional Competitiveness 2010.

Similarly, "medium and low innovators" regions are often affected by lower levels of competitiveness.

Here again, the recent EU studies on Innovation at regional level have shown important links between **innovation output** and **competitiveness** at regional level. Therefore, policy makers have recognised the importance of innovation for the **economic growth** of **cities and regions.** In this context, **Regional Innovation Srategies for smart specialisation** might be definitely framed as an attempt to synergise between innovation policy and regional competitiveness factors.

Shared Governance: The Smart Specialization Platform

A dedicated platform in the JRC-IPTS in Seville[25] has been established with purpose to provide guidance, training and policy advice to regions. The platform is likely to play a central role in collecting key data and providing evidence based policy guidelines to regions. The platform runs however the risk of gathering regional authorities having many different **priorities and interests** to support. This might also explain the reluctancy of some more advanced regions, to commit themselves to participate in the work of the platform[26].

As to the the governance, the platform will be run by a steering committee gathering representatives from DG REGIO, EMPL, R&I, EAC, INFSO, ENTR, SANCO, CLIMA, AGRI, JRC. The need to ensure an effective governance among those services, in coordination with Members States, will be a crucial issue ahead. In this respect a Mirror Group has been set up in parallel to the platform including organisations such as (EURADA, ERRIN, UEAPME, EBN, European Cluster Observatory, European Cluster Alliance, etc). This notwithstanding, a closer involvement of other important regional actors (e.g., university, research organizations) will probably be beneficial in order to cover a wider spectrum of priorities and interests.

Open Innovation in Open Government

The idea of **"open government"** should definitely be placed among the policy issues along the regional smart specialisation process. The creation of spatial data infrastructure will add value to both the accessibility and interoperability of territorial data for the benefits of regional public authorities, private sector and civil society as a whole. Open regional governments would also act as facilitators of **territorial cohesion** since opening up networks and facilitating the flow of relevant data between public-private authorities and citizens. The idea behind "Open Government" should be thus brought forward together with the "Smart Specialisation Strategy" process.

---

[25] http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm.
[26] http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm.

Public vs. Private R&I investments

The current policy debate keeps stressing the role **of Venture Capital and the stock market in supporting innovation**. A deeper understanding of venture capital potential will be a key factor for better regional policy design. A recent study published by the JRC[27] has pointed out the centrality for "venture capital" and "public action" to work together. In some countries the study has showed that there is a high correlation between venture capital investment in early stages and public R&D expenditure. This positive correlation is mainly based on the fact that **public interventions reduce uncertainty** associated to **risky investments**. Investing in public research can be thus deemed as a driver to stimulate private financing of innovation[28]. In the context of smart specialisation strategies, the prospected regional "**public-corporate governance**" will certainly play a paramount role to drive innovation investments.

2.2   The crucial role of the education system: the scenario in Italy

Is the Italian education system competitive?

The Italian education system should be reoriented towards a **knowledge-based and innovative model**. Discussing over competitiveness of education systems, the executive opinion survey run by the *World Economic Forum* in the "Global Competitiveness Report 2011" outlines important dilemmas for the Italian system. The feedback received to the question: "**How well does the educational system in your country meets the needs of a competitive economy**?" places Italy at the 88th in the rank (out of 142). Countries such as Ghana, Macedonia, Ruanda, just to quote some examples, have reached higher scores in the rank. This highlights issues related to the level of **trust in the Italian education system**: restore appropriate levels of **trust within the system and civil society through a strategic policy-mix** will be a serious challenge to tackle. A second issues is very much related to the capacity of governmental institutions to shape education policy and programmes together with targeted stakeholders including civil society.

---

[27] http://iri.jrc.es/papers/WP%2005-2011%20final.pdf
[28] http://iri.jrc.es/papers/WP%2005-2011%20final.pdf

The engagement of a broad range of stakeholders is by definition untwined to levels of **transparency in policy making**. In relation to this, it is not a coincidence that the "Global Competitiveness Report 2011" again ranks Italy stable in the 135th (out of 142) when it comes to the "**transparency of government policy making**"[29].

Moving to **budgetary and national government spending outlook,** the figures on HERD (Higher education expenditure in R&D) show that Higher education organizations in Italy spend less in R&D compared to the OECD average (2008).
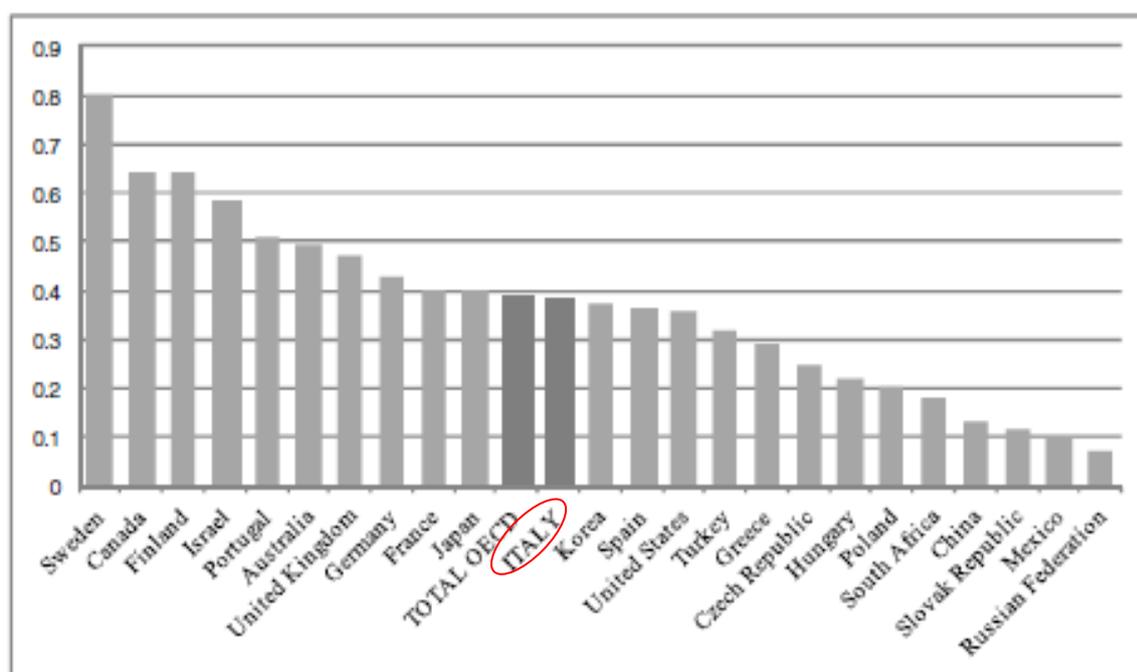
OECD: HERD (Higher education expenditure on R&D) as a percentage of GDP, 2008.

In particular, business and industry funded only 1.3% of the Italian university R&D in 2007 compared to an OECD average of 6.5% (OECD 2011).

The main result is the lack of **competitiveness of the Italian education system internationally.** In 2008, only **2% of the world's students studying outside of their home country came to Italy, compared with 18.7% to the US, 10% to the UK, 7.3% to both Germany and France** (OECD, 2010). **Net emigration of highly skilled individuals** is also considerable. Furthermore, the Italian higher education and research system is not attractive to non-Italian researchers,

---

[29] www3.weforum.org/…/WEF_GlobalCompetitivenessReport_2010-11.

partly due to cumbersome administrative procedures for admission. It seems that there is potential in knowledge generation but **limited knowledge transfer**. In the last twenty years, the share of public R&D has slightly increased in Italy, but overall **R&D investment remains significantly behind OECD standards**; R&D expenditure was 1.27% of GDP, compared with over 1.90% for the EU and 2.25% for the OECD average.

Italian universities have strengths in knowledge generation, but continue to make a relatively **modest contribution to innovation**. In 1998- 2008, Italy was the eighth largest world producer of scientific publications (its share of worldwide publication was 3.6% versus 26% in the US, 7.6% in Japan, 7% in China, around 6% in the UK and Germany). Italian research output is among the top ten in the world (measured by the number of quotes in the two years following the publication), with special strengths in physics and chemistry. At the same time, the number of official university European patents, **industry funding** and **university-industry collaboration in general remain modest**[30].
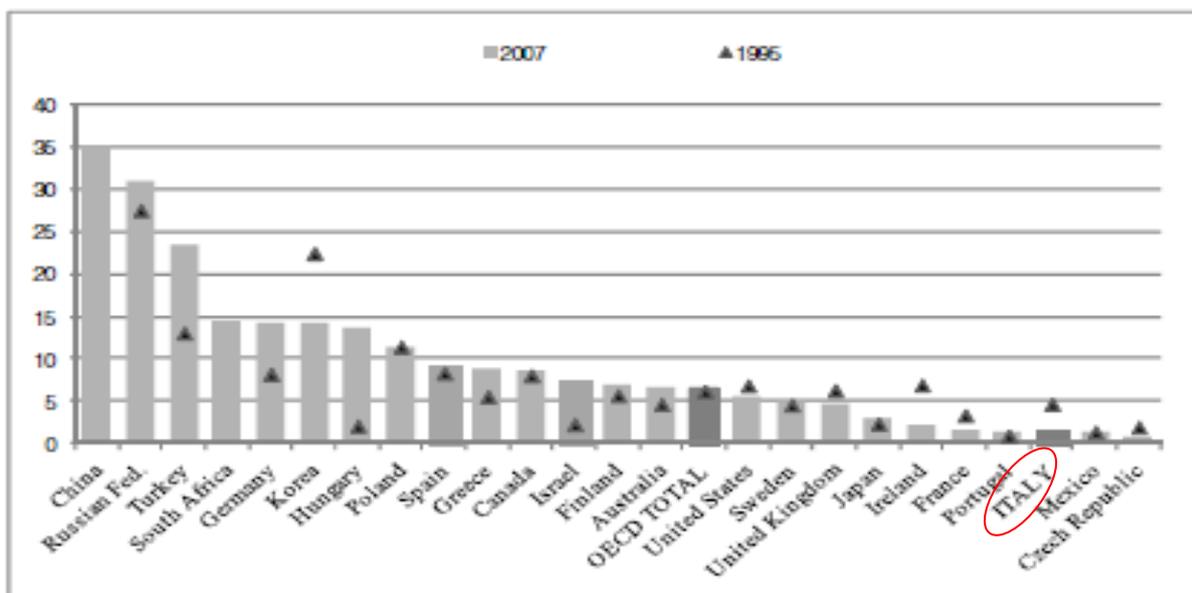
OECD: HERD[31] financed by Industry (% 1995-2007).

By picking up specific segments along the education chain (**Tertiary education**) the scenario gets even worse.

---

[30] Bonaccorsi and Daraio, 2007; OECD, 2008.
[31] Higher education expenditure on R&D
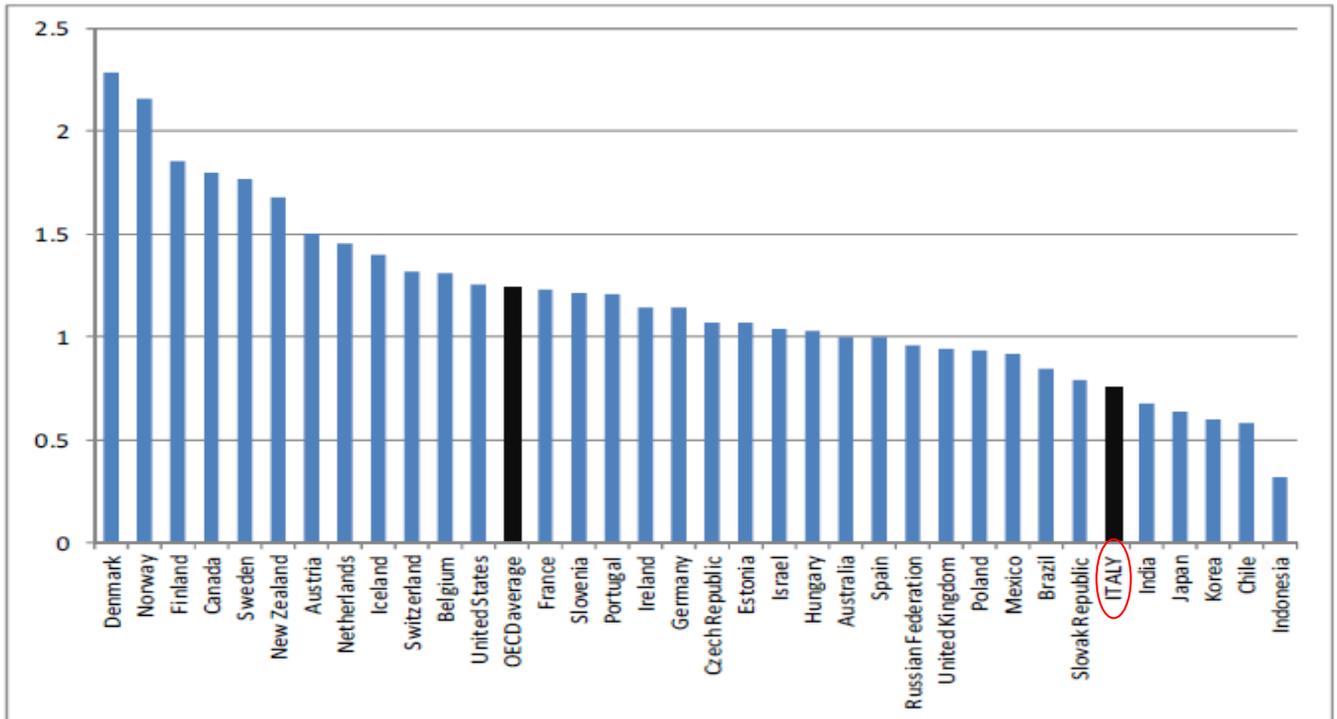
OECD: Public expenditure on tertiary education as % of GDP, 2007.

Italian Public expenditure as % of GDP in tertiary education is patently lagging behind compared to OECD average wich stands above 1%. Regrettably, we cannot report on significant improvements when it comes to investments in human capital. **Italy allocates some 4,5% as share of GDP to the development of Human Capital**. In the EU 15 the average is above 5%. A high **qualified labour and high quality knowledge within the society** will be necessary framework conditions to support a competitive framework underpinnig an excellente education system.
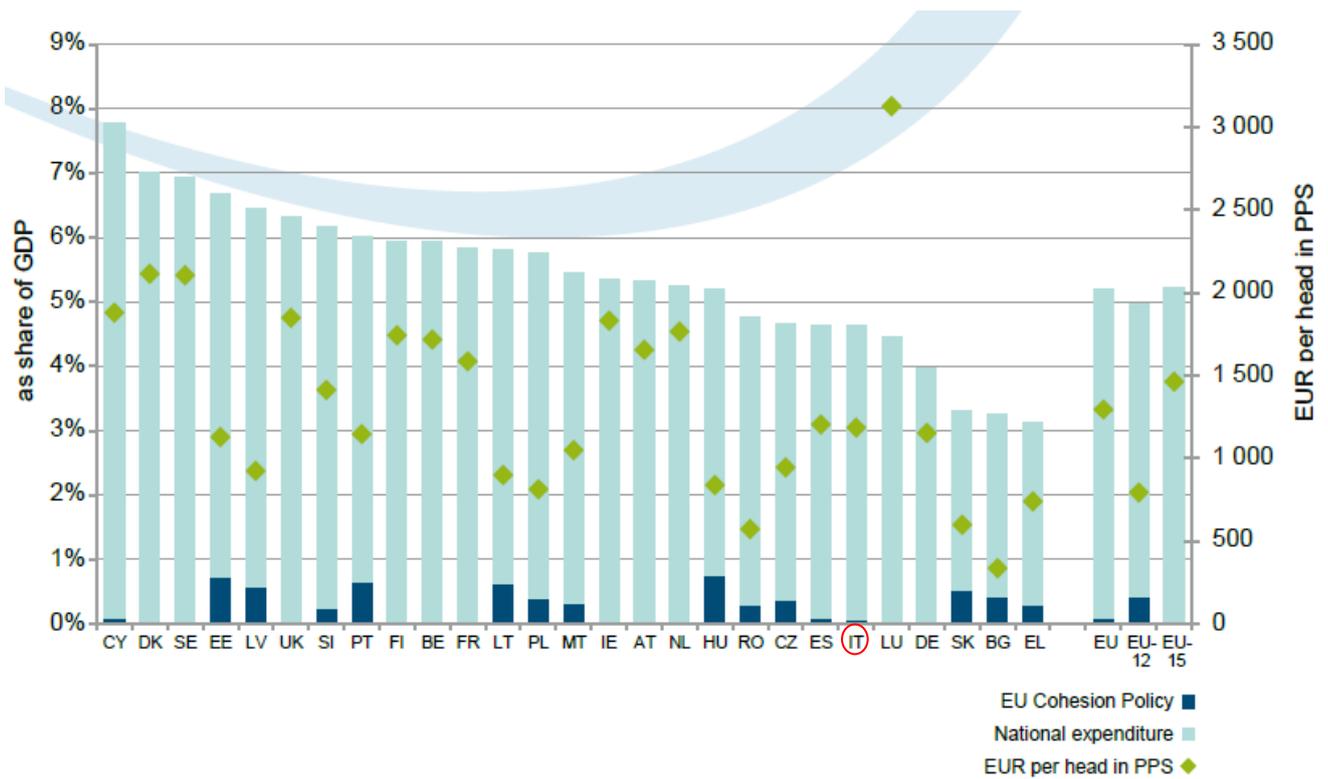
OECD: Developing Human Capital and talents,2007

The development of human capital will be extremely relevant in view of Smart Specialisation Strategies. The need for talents creation and retention has been placed among the top policy priorities along the SSS3 process. This is the reason why **regional innovation strategies** need to be feeded by an integrated approach in which human capital is embedded within a place-based approach to economic growth and smart inclusion objectives.

3 Focusing on FP7 regional participation patterns

The main purpose of this chapter is to provide an overview of regional participation patterns in the EU Seventh Framework Programme for R&D, in relation to the Italian context. Data and figures mainly refer to financial aspects (EU contribution). Further in depth analysis will be necessary in order to address operational recommendations capturing efficiency and effectiveness measures.

3.1 Seventh Framework Programme: Regional participation

Up until **March 2012 Italy** received **ML Euro 2.316.180.992** (N. 7.899 project financed – N.1.332 projects as **Coordinator "17%")**. Looking into a regional perspective, the participation of Italian regions in FP7 has been unsurprisingly characterised by non linear performance in terms of EU contribution. The main recipient of EU contribution is Lazio Region receiving some 600 Ml euro (<u>please note that</u> <u>calculations includes CNR[32] projects</u>). Lombardia Region is one step behind receiving some 490 Ml euro.

FP7 Regiona Participation (in ML euro)
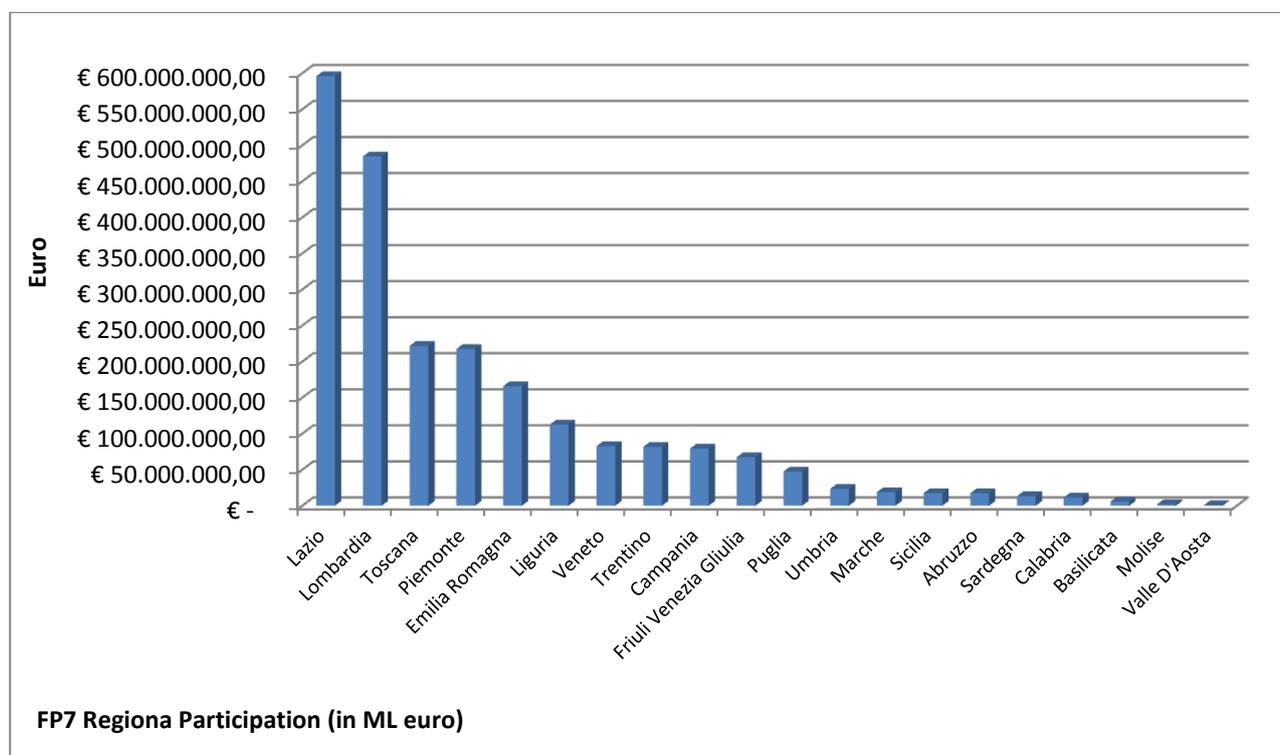
Source: elaboration through CORDA, March 2012.

---

[32] "Centro Nazionale delle Ricerche" receives some 165 ML Euro in terms of EU contribution.

Roughly speaking, two regions (Lombardia and Lazio) obtain some 47% of the total FP7 contribution going to Italy as shown in the following chart:

Share of FP7Contribution (%)
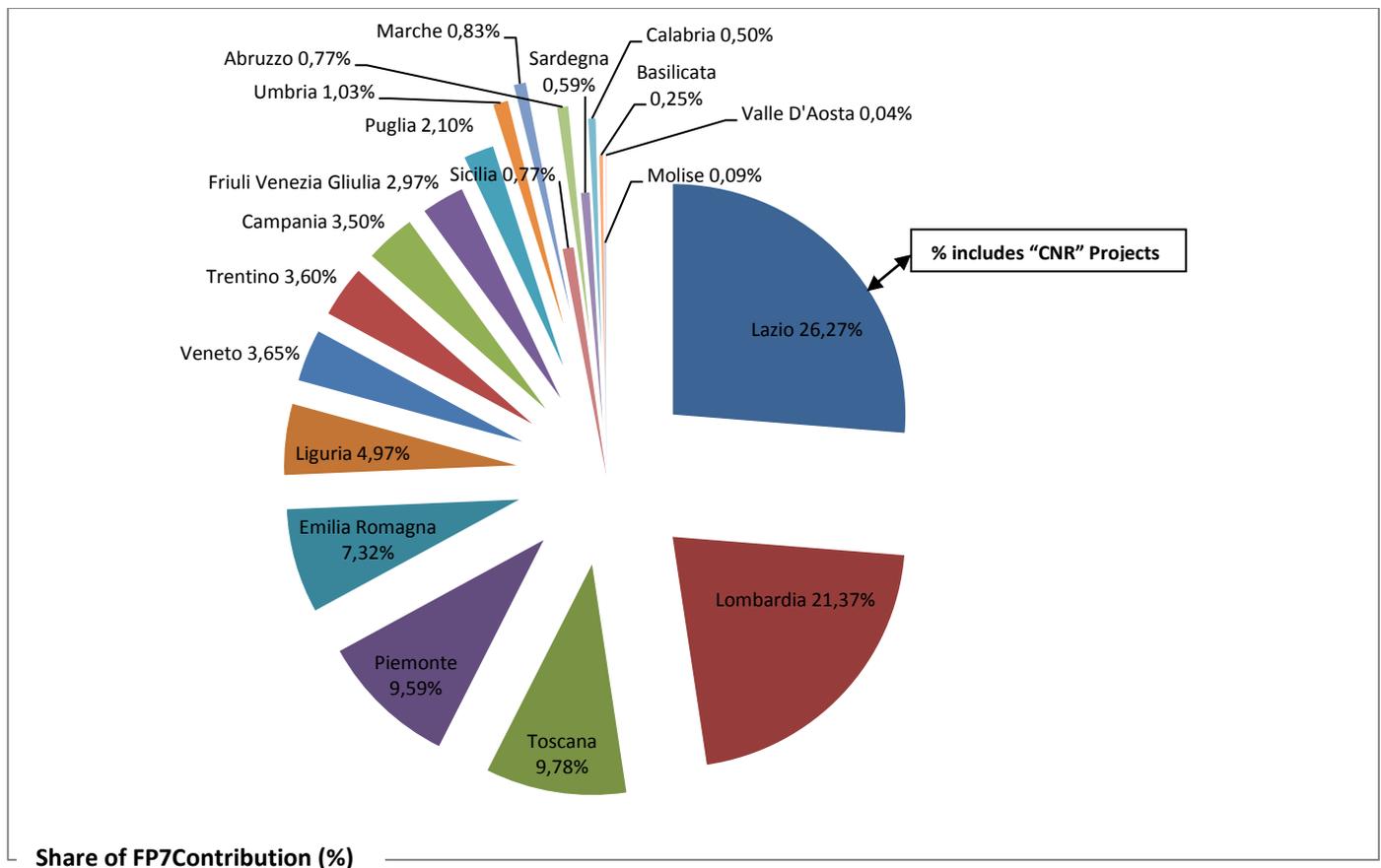
Source: elaboration through CORDA, March 2012.

The above percentages are clearly not exhaustive in order to draw relevant conclusions. Other parameters such as differences in demography, presence of national research institutions in certain regions, number of researchers, research investments and availability of infrastructures should be carefully taken into account to assess regional participation and performance.

In a prospective 2014, Smart Specialisation Strategies might be extremely important to reshape participation patterns in FP7. For instance by accompanying regions pinning down their strategic priorities (e.g., refocusing on the most competitive areas, building critical mass, upgrading infrastructures, developing human capital) on which collaborative advantages should be endorsed at operational level.

Lazio - Lombardia

Looking in more detail into FP7 themes (**Cooperation-IDEAS-People**), it is interesting to note that Lombardia Region has a performance lead (EC Contribution) in the ICT (n. 340 Projects financed) and in Health theme (n.200 projects financed). Lazio Region is however receiving higher EU contribution in Energy and Environment theme.
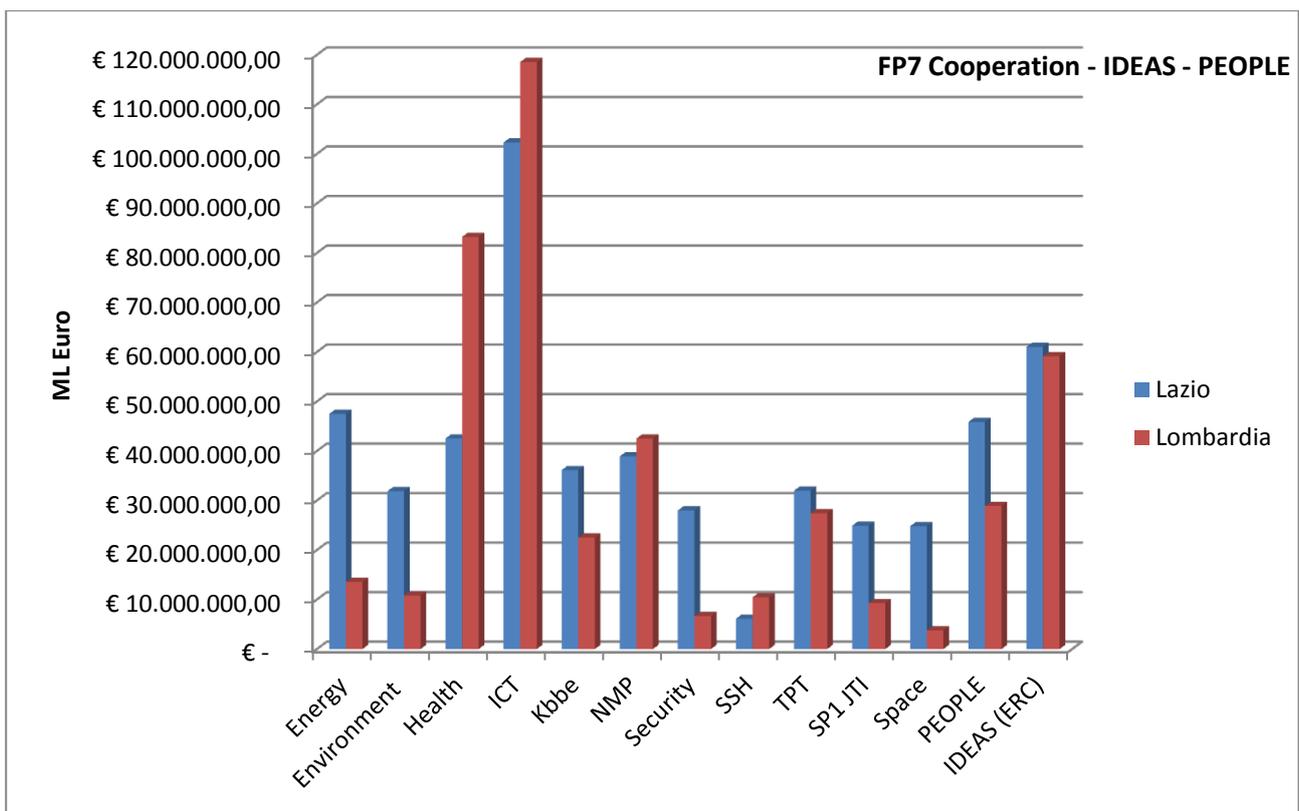
Source: elaboration through CORDA, March 2012.

A more balanced distribution of EU contribution between the two regions characterizes the **ERC grants**: CNR, La Sapienza and Roma Tor Vergata lead the ranking in terms of EC Contribution in Lazio. Bocconi University and Centro San Raffaele are the most active higher education institutions on the ERC theme in terms of number of participations.
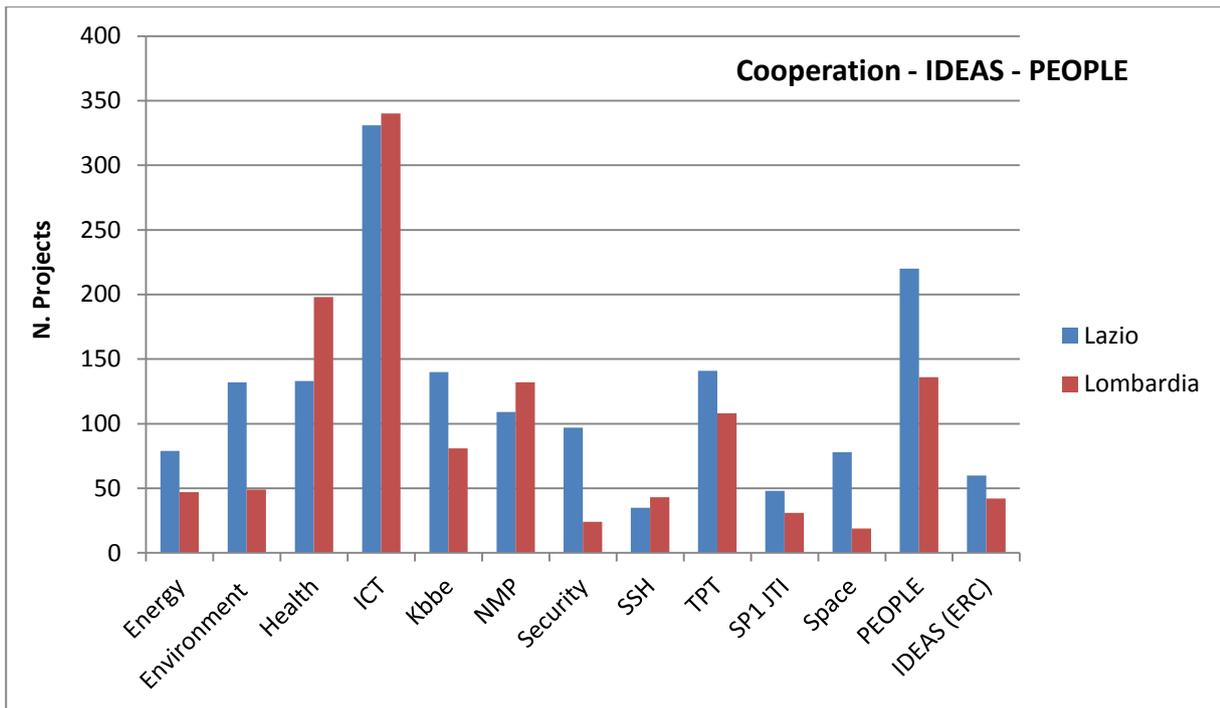
Source: elaboration through CORDA, March 2012.

As regards Capacities Programme, the **Research Infrastructure** theme shows unbalances in favor of Lazio due to the high % EU contribution going to CNR and Istituto Nazionale di Fisica Nucleare.
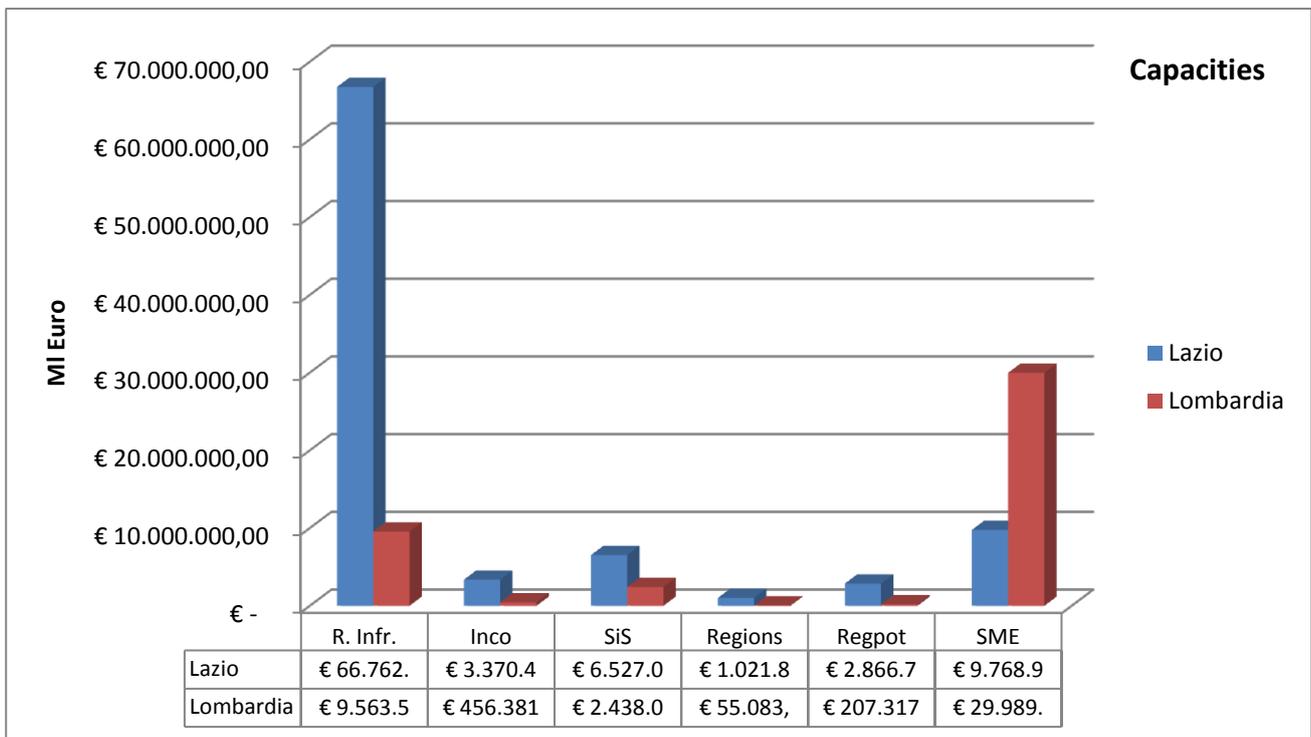
	R. Infr.	Inco	SiS	Regions	Regpot	SME
Lazio	€ 66.762.	€ 3.370.4	€ 6.527.0	€ 1.021.8	€ 2.866.7	€ 9.768.9
Lombardia	€ 9.563.5	€ 456.381	€ 2.438.0	€ 55.083,	€ 207.317	€ 29.989.

Source: elaboration through CORDA, March 2012.
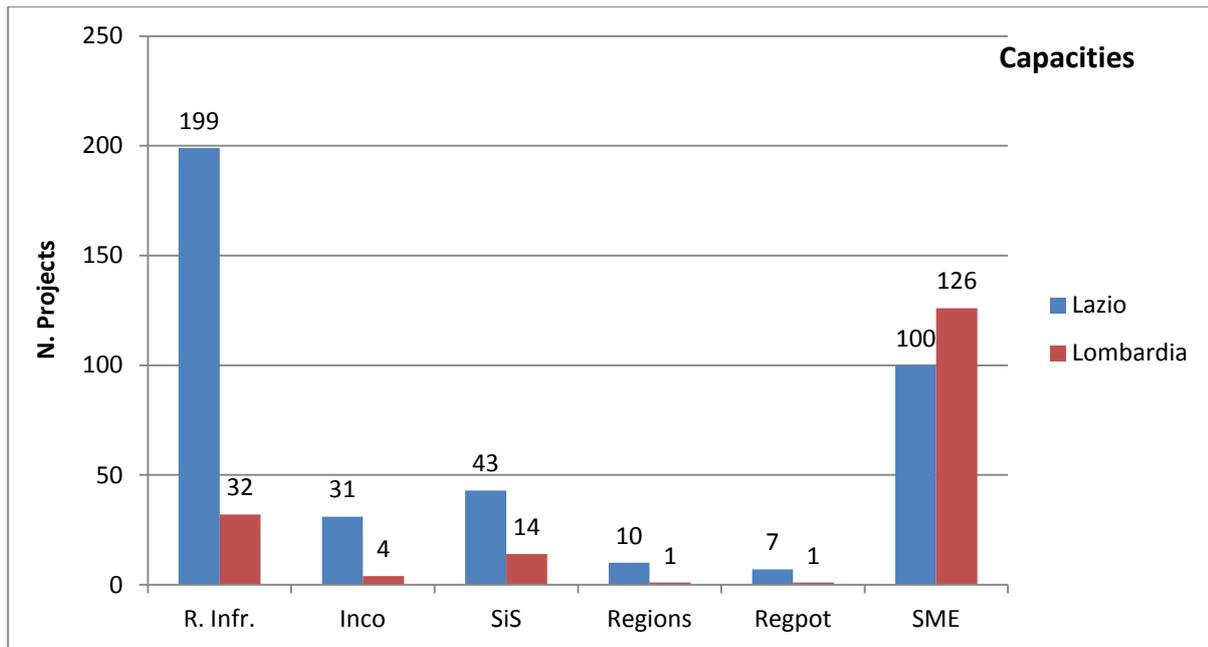
Source: elaboration through CORDA, March 2012.

Toscana - Piemonte - Emilia Romagna

Considering a second set of regions, Piemonte receives the greatest amount of EU contribution in **NMP** and **TPT** themes led by the leading performance of *Centro Ricerche FIAT*.

Toscana region has the highest EU contribution in the **Health** theme[33] while Emilia Romagna has the lead in **KBBE** thanks to the University of Bologna.

It is also worth noting the comparative higher EU contribution received by Toscana in the **Ideas** programme.
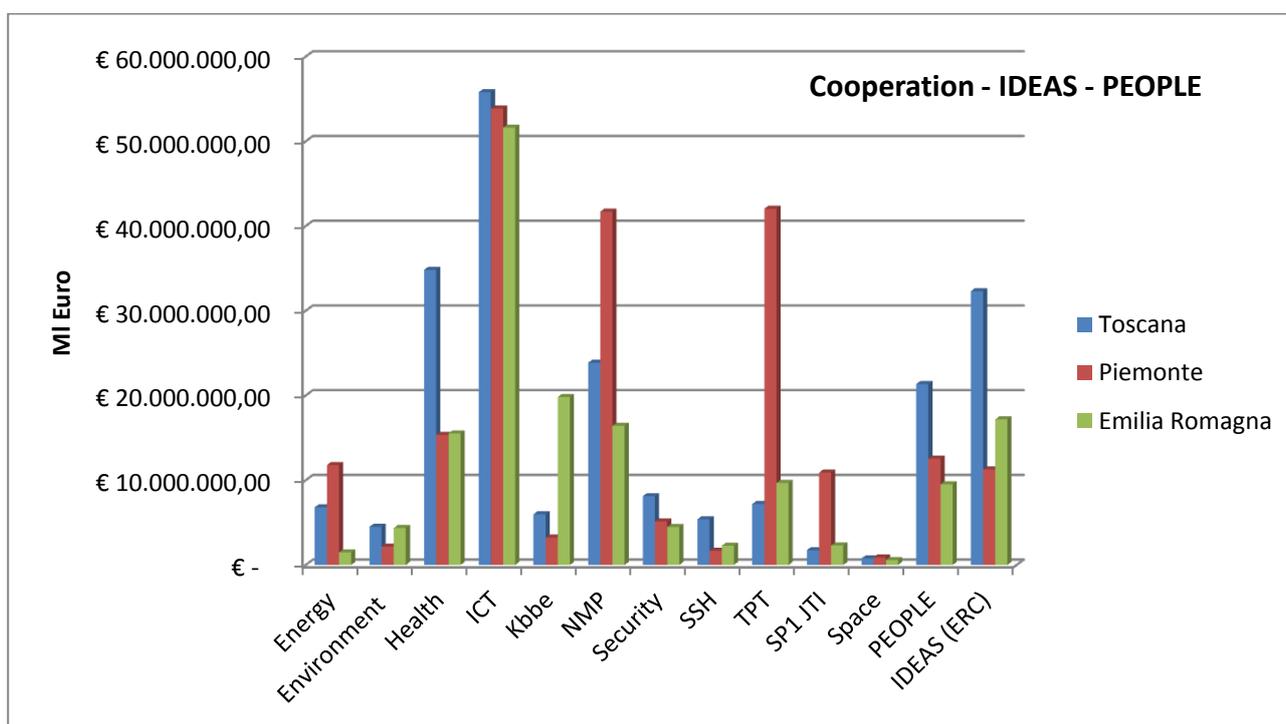
Source: Elaboration through CORDA, March 2012.

"*Consorzio InterUniversitario Cineca*" is the largest recipient of EU contribution in the **Research Infrastructure** theme in Emilia Romagna, while "*Consorzio InterUniversitario Risonanze Magnetiche*" is the largest counterpart in Toscana.

---

[33] Università di Firenze , Università di Siena, ALTA.
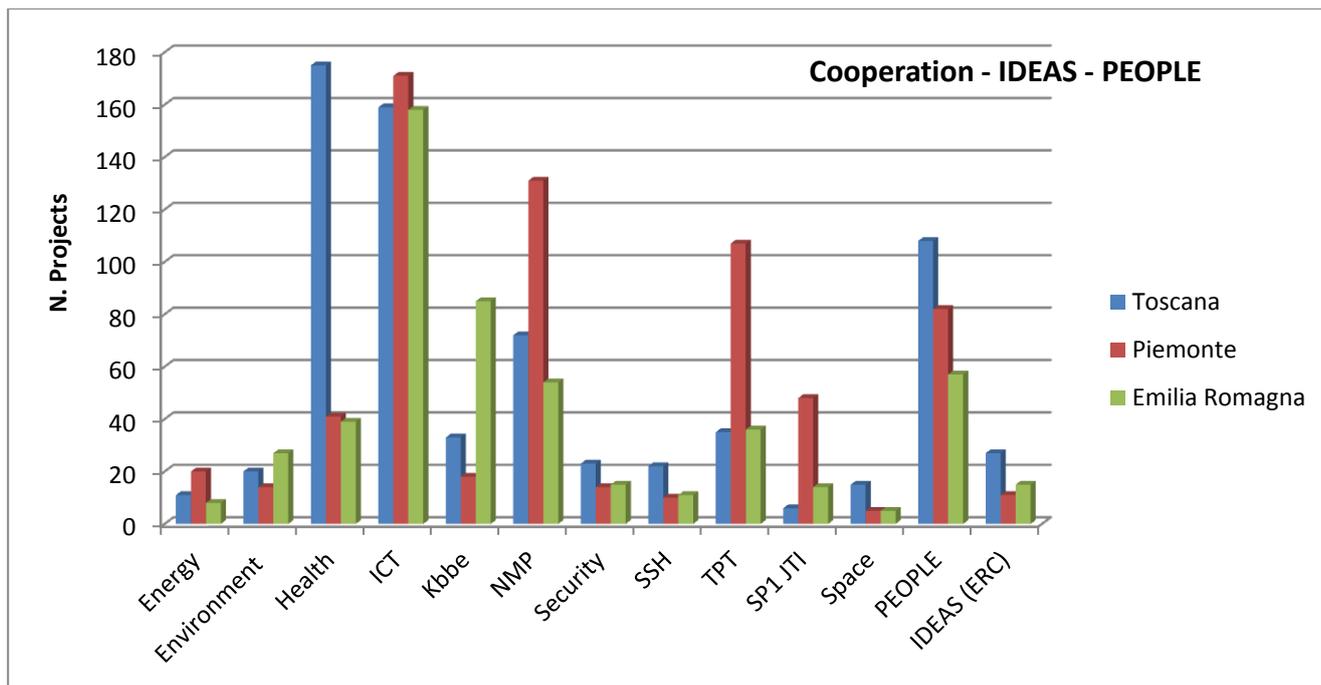
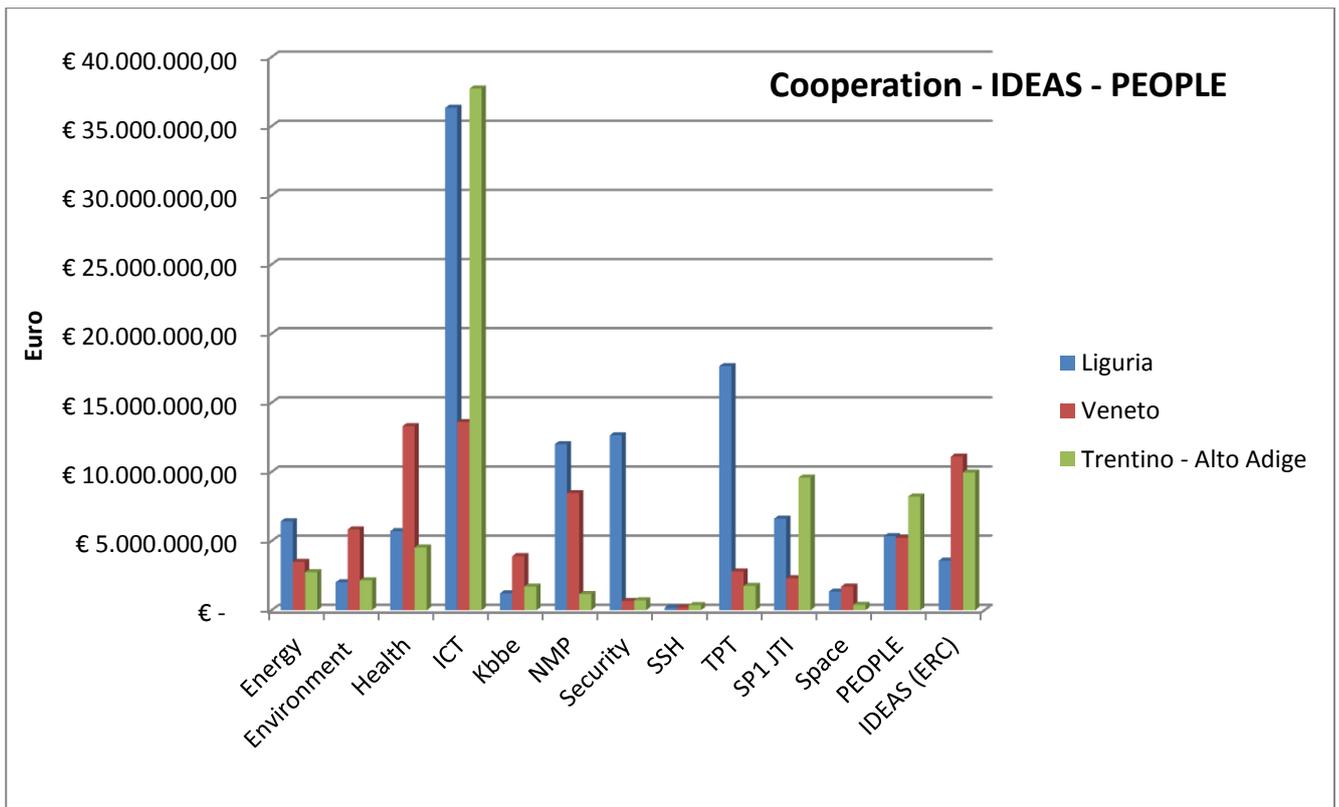**Source: Elaboration through CORDA, March 2012.**
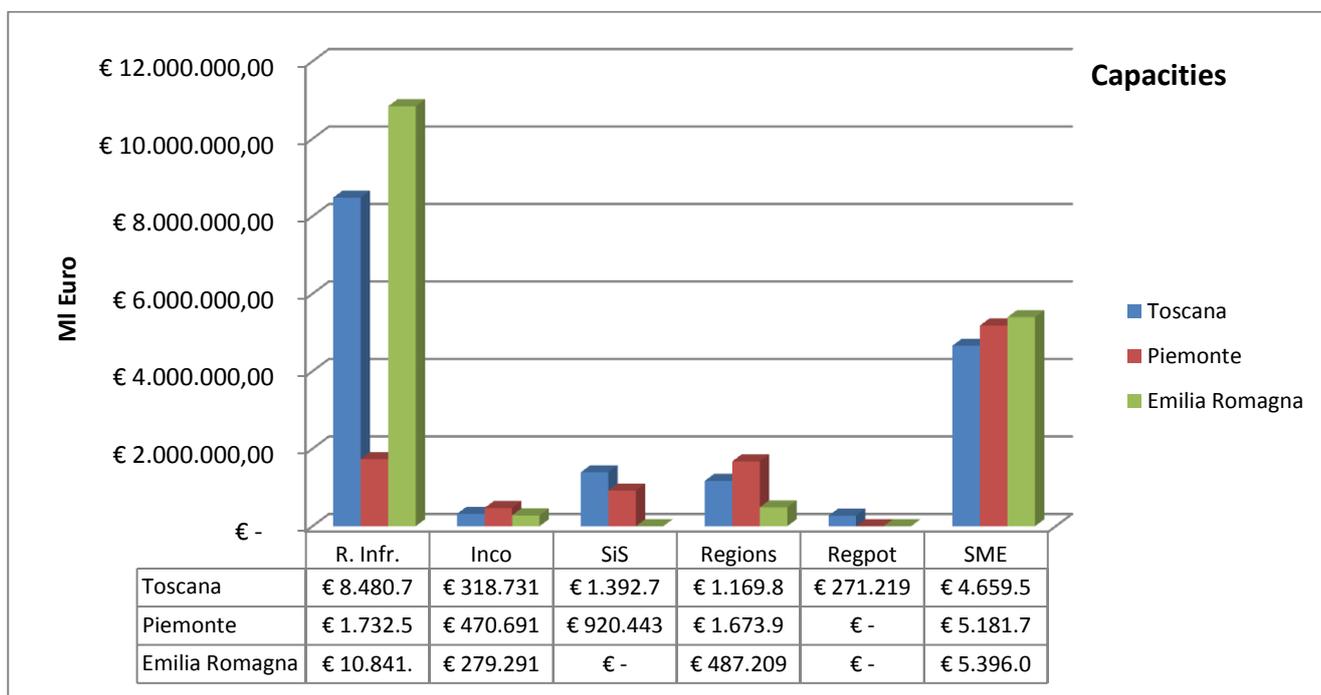
	R. Infr.	Inco	SiS	Regions	Regpot	SME
Toscana	€ 8.480.7	€ 318.731	€ 1.392.7	€ 1.169.8	€ 271.219	€ 4.659.5
Piemonte	€ 1.732.5	€ 470.691	€ 920.443	€ 1.673.9	€ -	€ 5.181.7
Emilia Romagna	€ 10.841.	€ 279.291	€ -	€ 487.209	€ -	€ 5.396.0

Source: Elaboration through CORDA, March 2012.
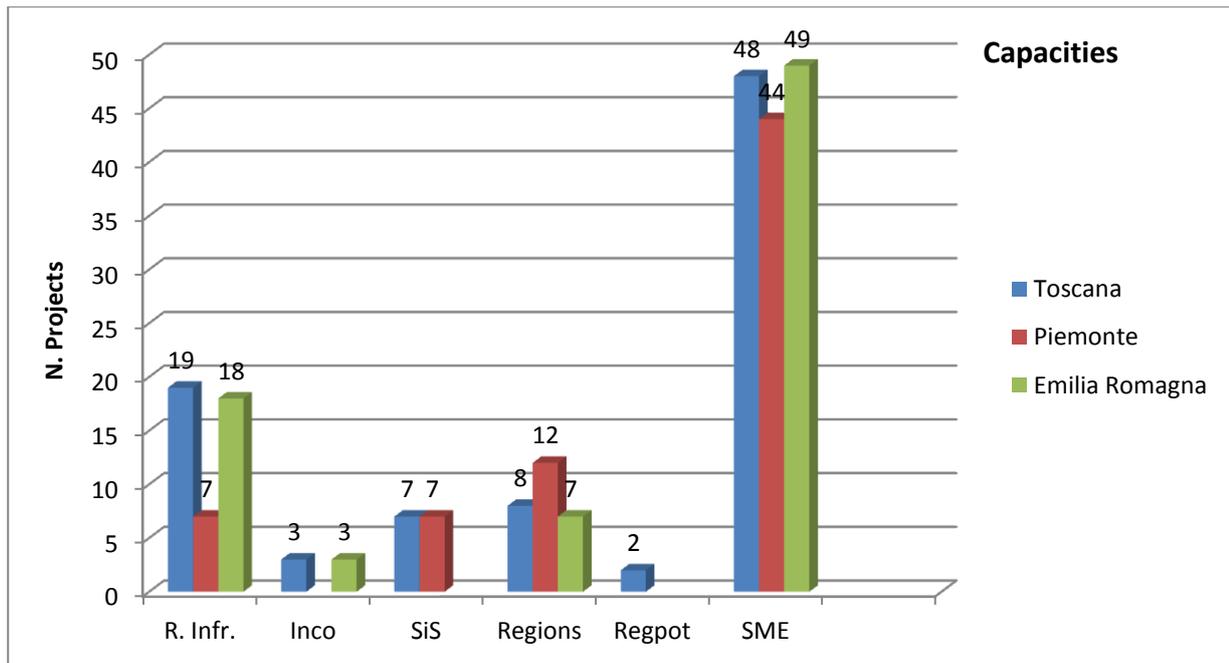
Source: Elaboration through CORDA, March 2012.

Liguria - Veneto – Trentino-Alto Adige

Fondazione Istituto Italiano di Tecnologia and *Università di Genova* are the main recipients of EU contribution in Liguria supported by a strong presence of private organisations such as ELSAG DATAMAT spa, SELEX and SOFTECO.

Source: Elaboration through CORDA, March 2012.
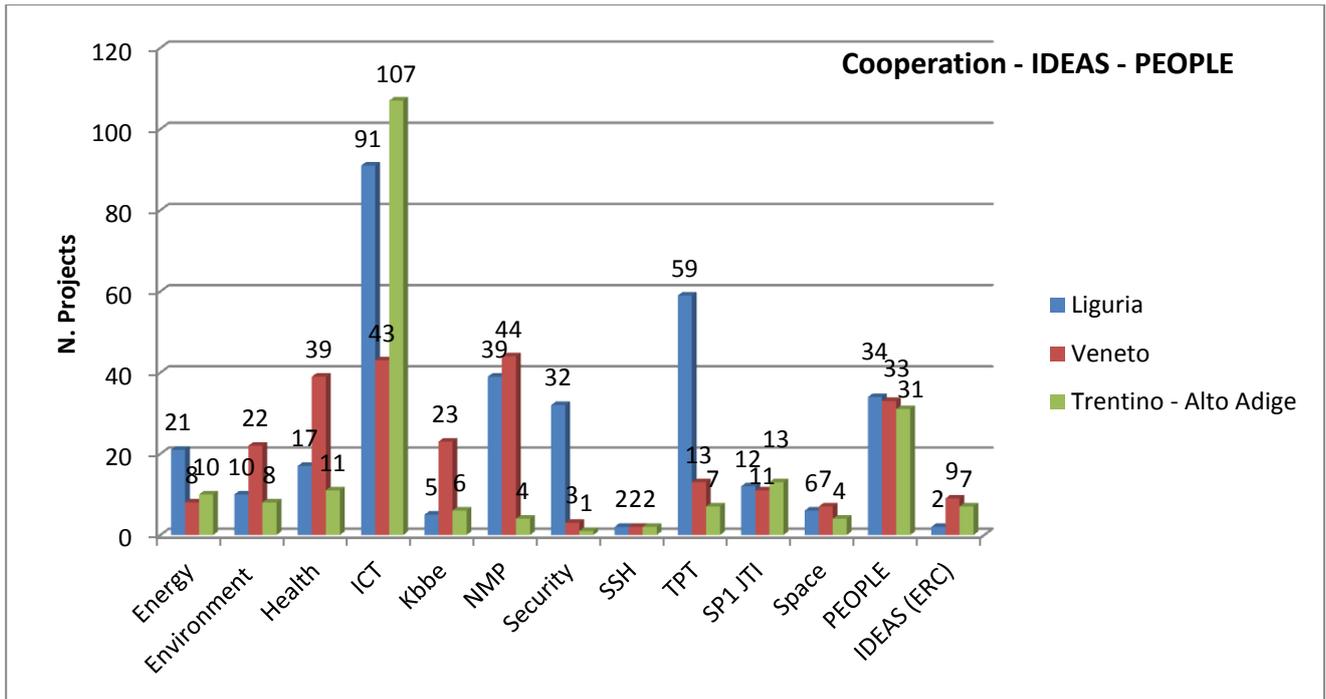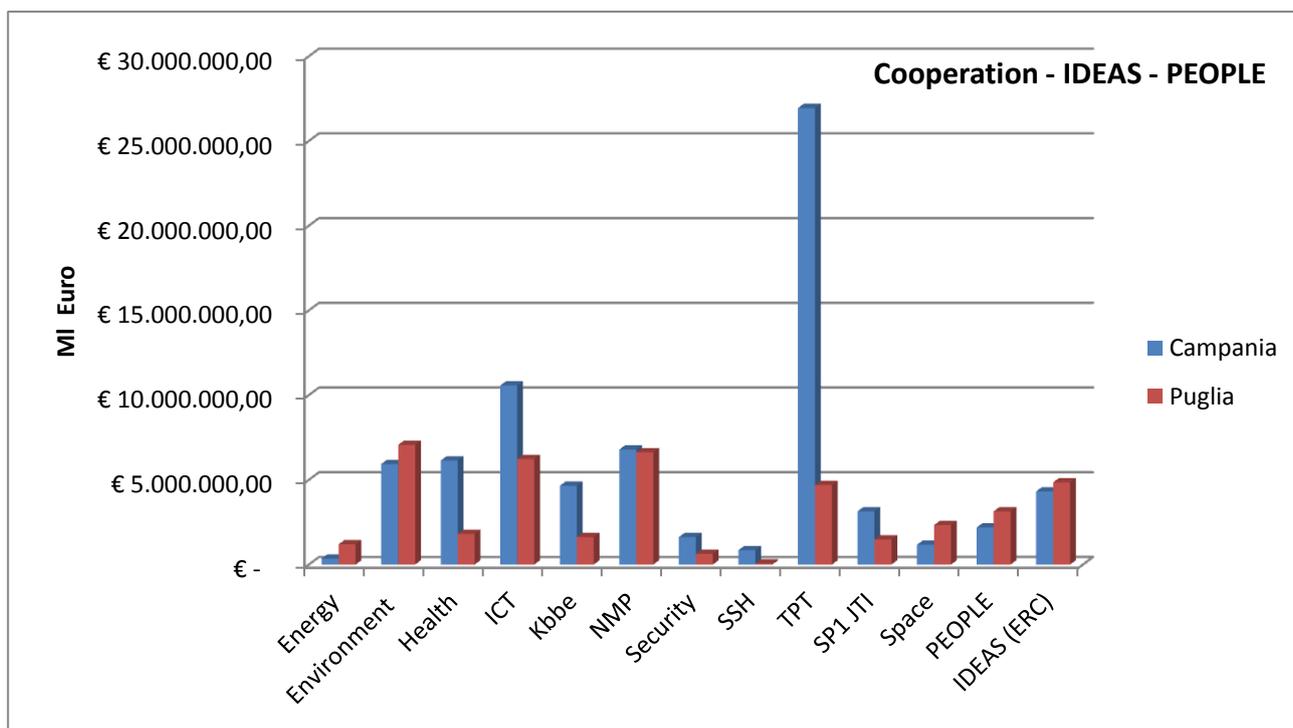
Source: Elaboration through CORDA, March 2012.

	R. Infr.	Inco	SiS	Regions	Regpot	SME
Liguria	€ 1.821.47	€ -	€ 332.242,	€ -	€ -	€ 2.705.12
Veneto	€ 2.803.96	€ 186.156,	€ 305.892,	€ 387.189,	€ 241.828,	€ 2.295.93
Trentino-Alto Adige	€ 1.474.92	€ 64.735,0	€ 1.023.75	€ 174.880,	€ -	€ 1.464.08
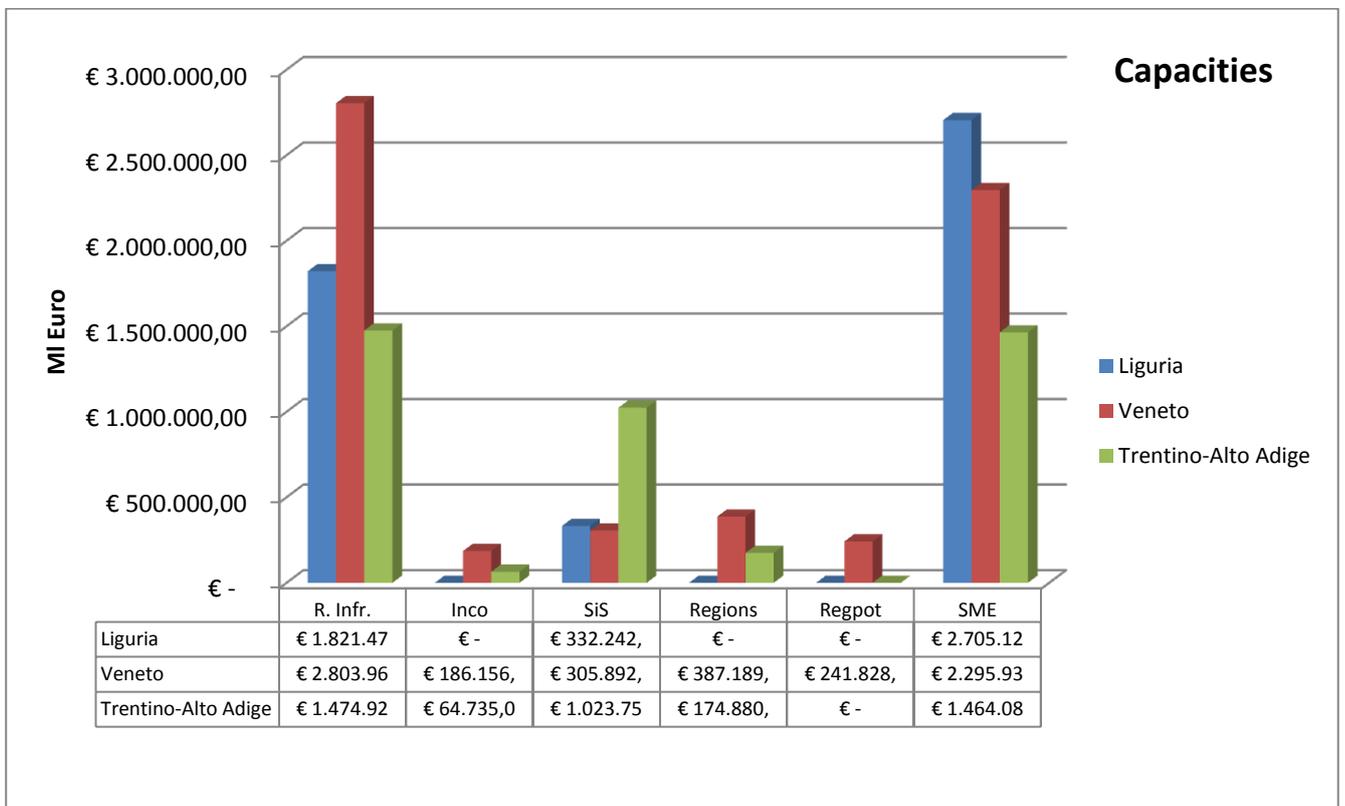
Source: Elaboration through CORDA, March 2012.
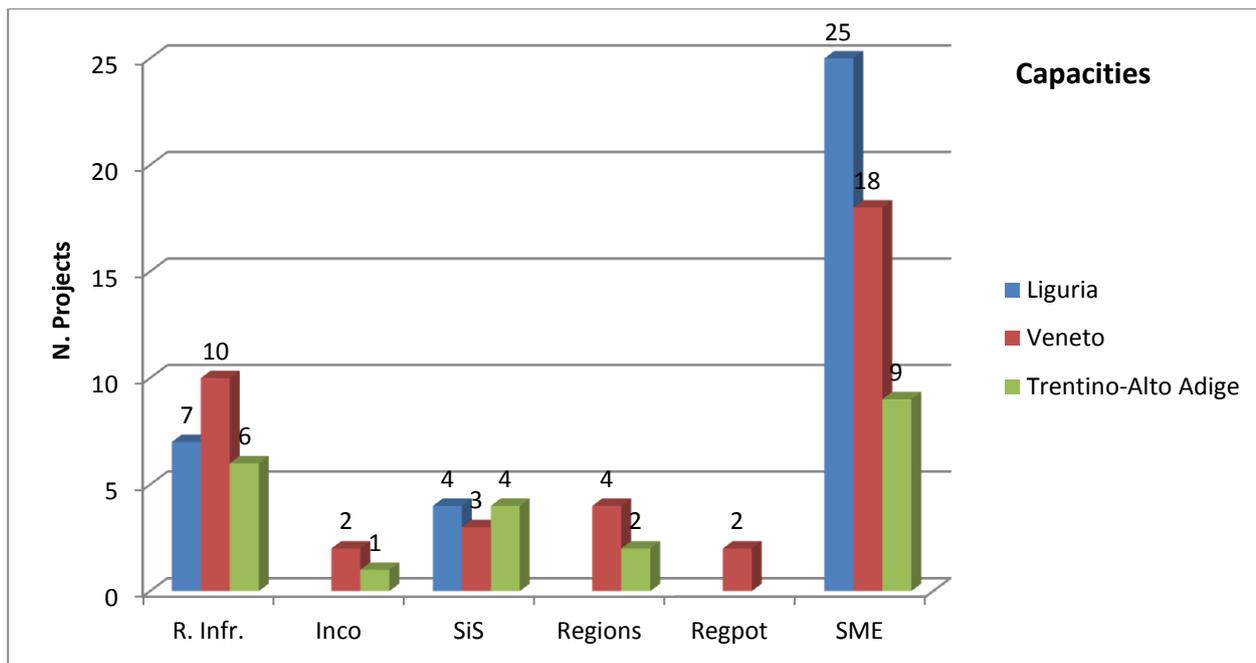
Source: Elaboration through CORDA, March 2012.

Campania - Puglia

Campania region has a fairly high EU contribution in the **transport theme** (*Centro Italiano Ricerche Aerospaziali* and *ALENIA Aeronautica* lead the ranking in terms of number of participation and budget share).
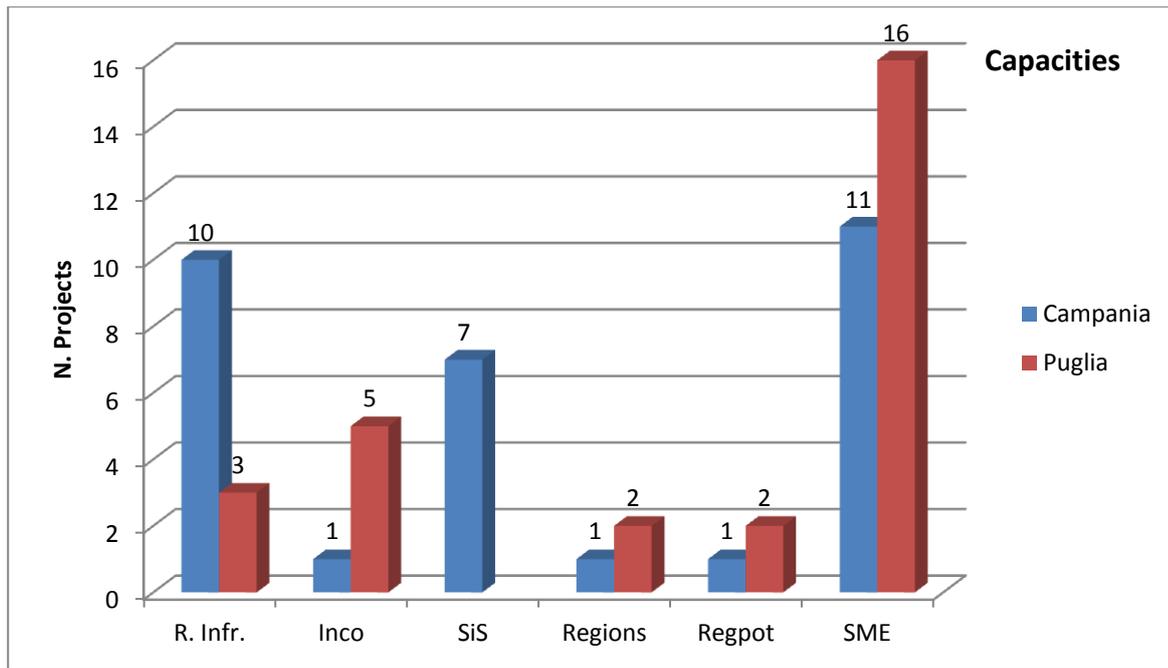

Source: Elaboration through CORDA, March 2012.
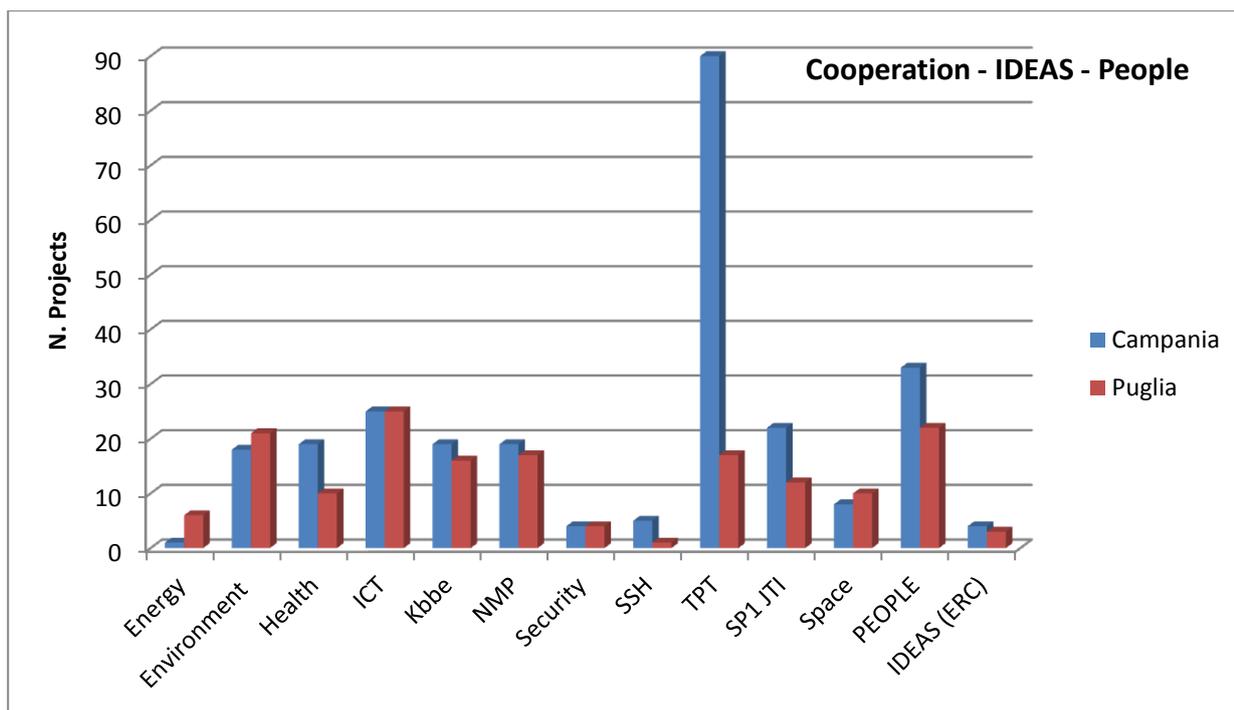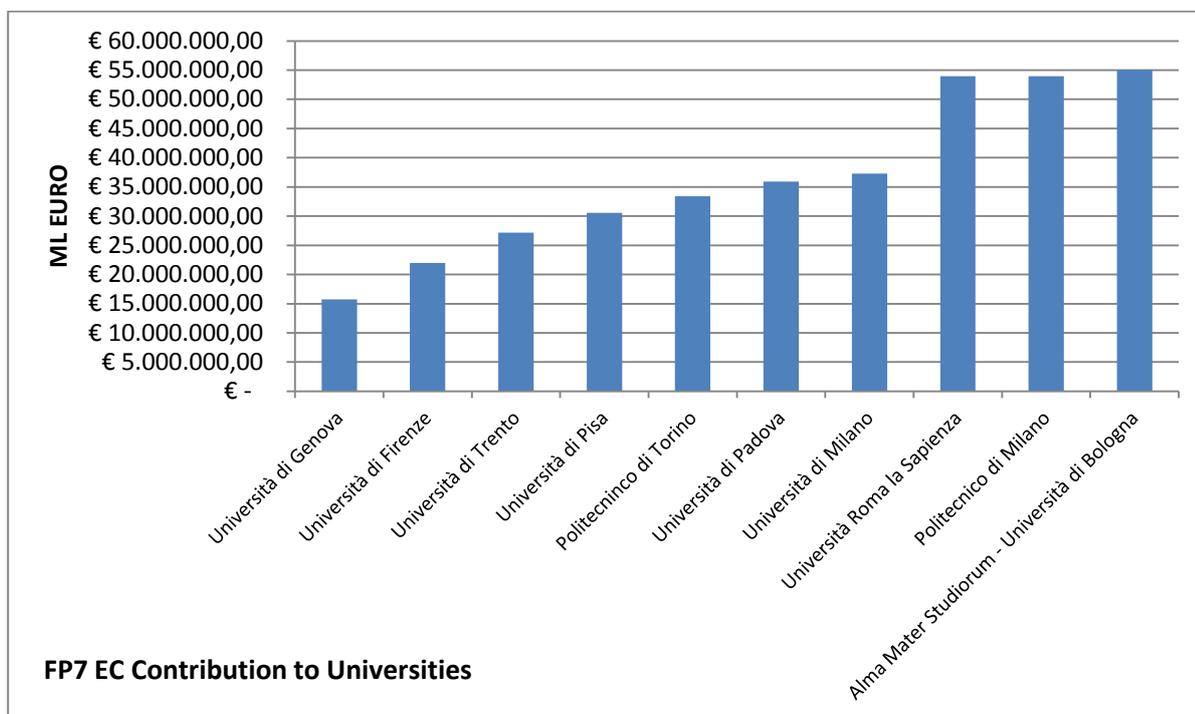
Source: Elaboration through CORDA, March 2012.

	R. Infr.	Inco	SiS	Regions	Regpot	SME
Campania	€ 3.194.	€ 35.427	€ 1.293.	€ 62.871	€ 809.71	€ 2.380.
Puglia	€ 885.43	€ 802.71	€ -	€ 157.04	€ 3.569.	€ 1.327.
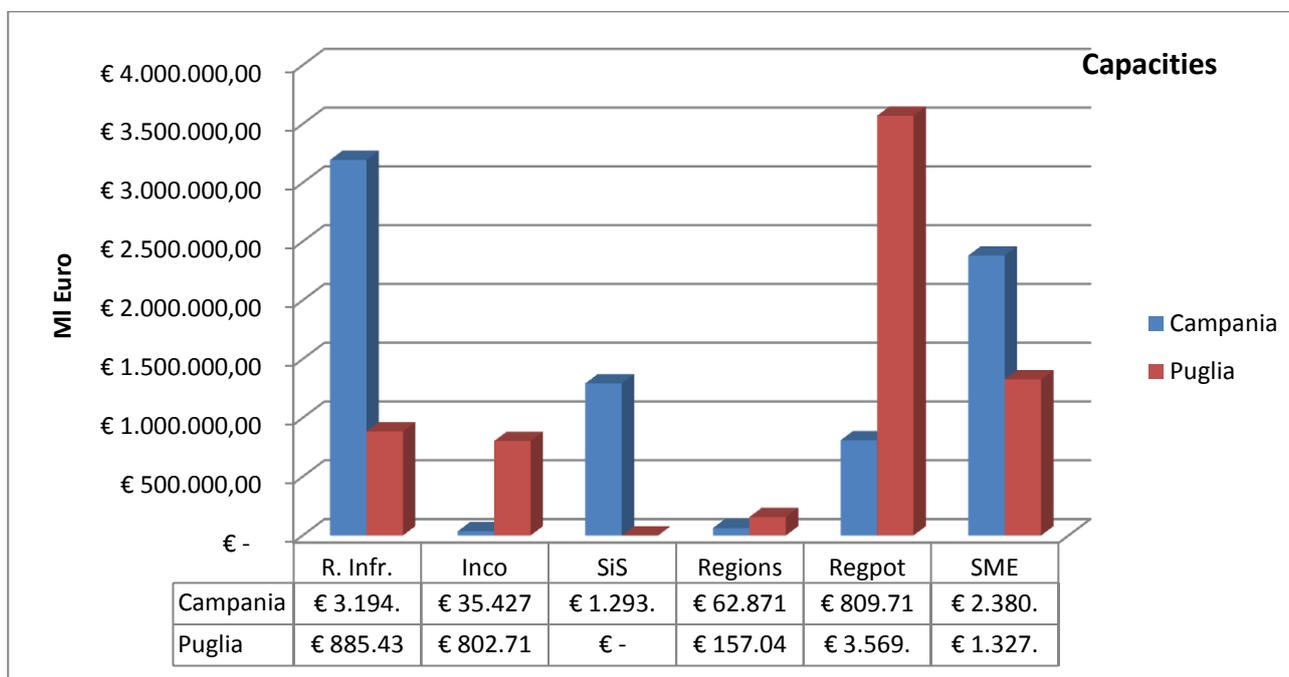
Source: Elaboration through CORDA, March 2012.

Source: Elaboration through CORDA, March 2012.

A snapshot on Universities in FP7

Considering financial aspects, *Università Roma La Sapienza, Politecnico di Milano* and *Università di Bologna* receive the highest EU contribution.


FP7 EC Contribution to Universities

Source: elaboration through CORDA, Jan. 2012.

The *University of Bologna* ranks 1st in relation to the total number of FP7 financed projects (N. 168 FP7 financed projects) with an EC contribution equivalent to ML € 55.049.475,24.
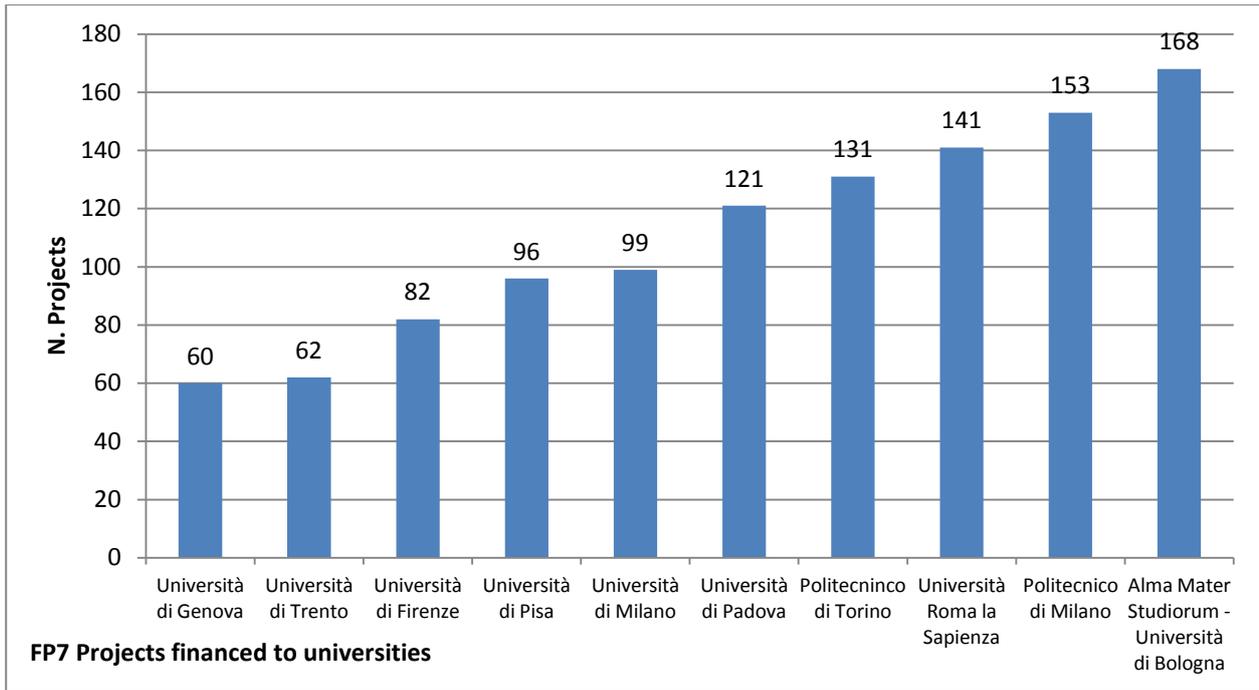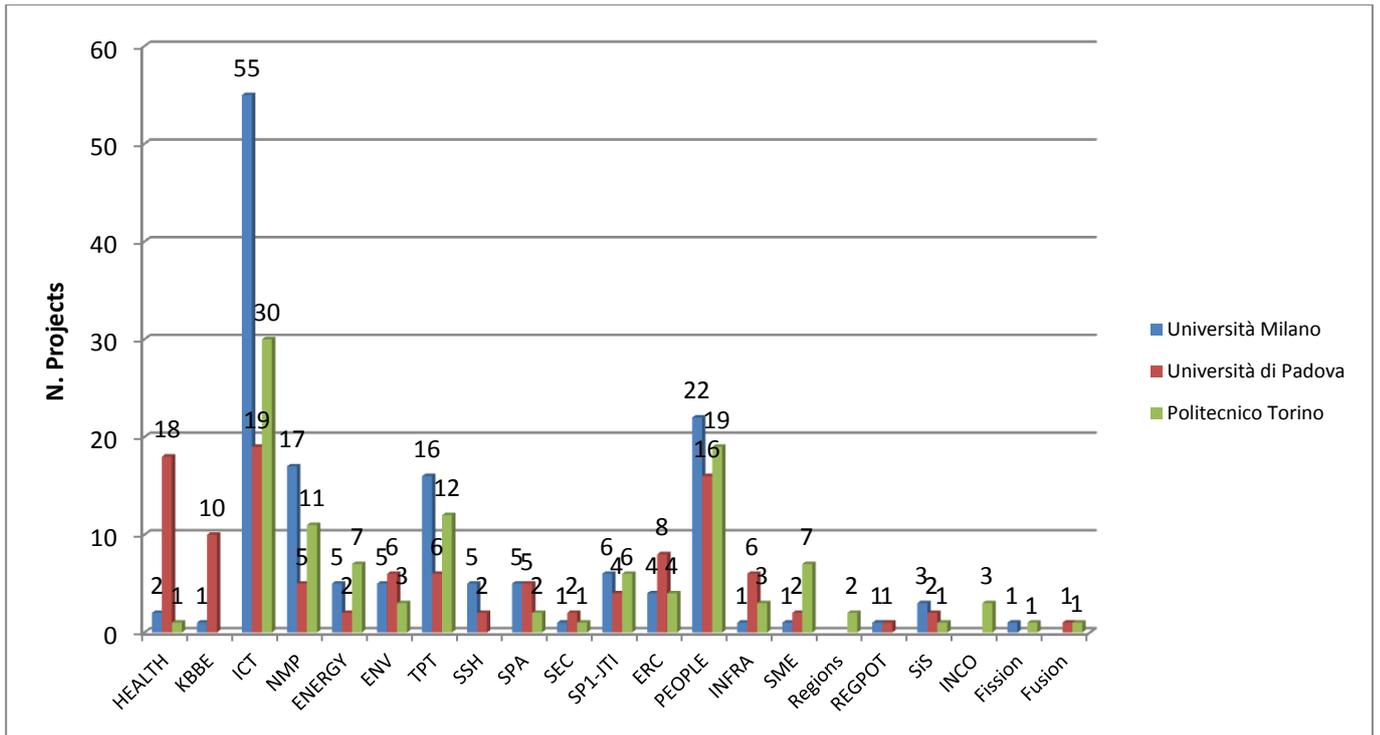
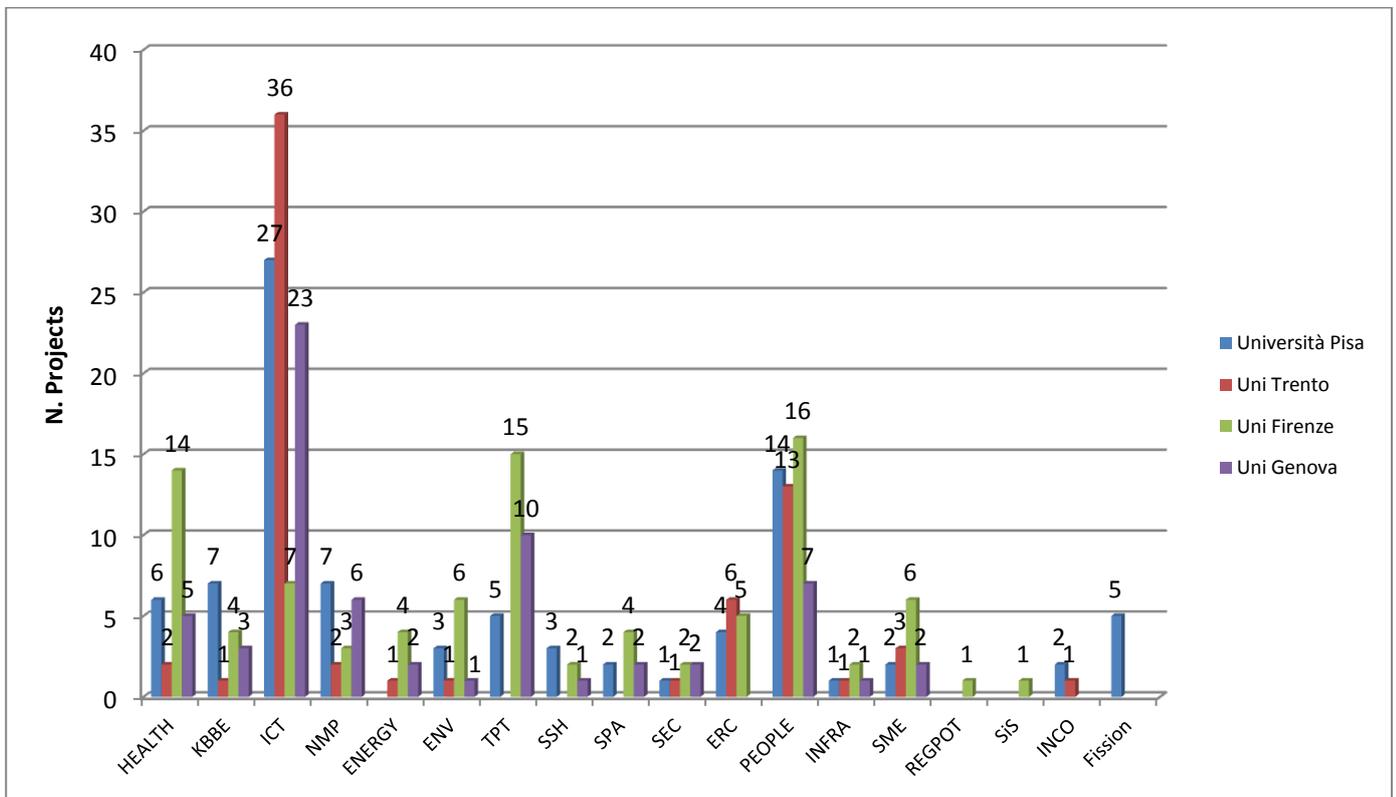**Source: elaboration through CORDA, Jan. 2012.**

Universities and FP7themes: Cooperation - Ideas - People - Capacities
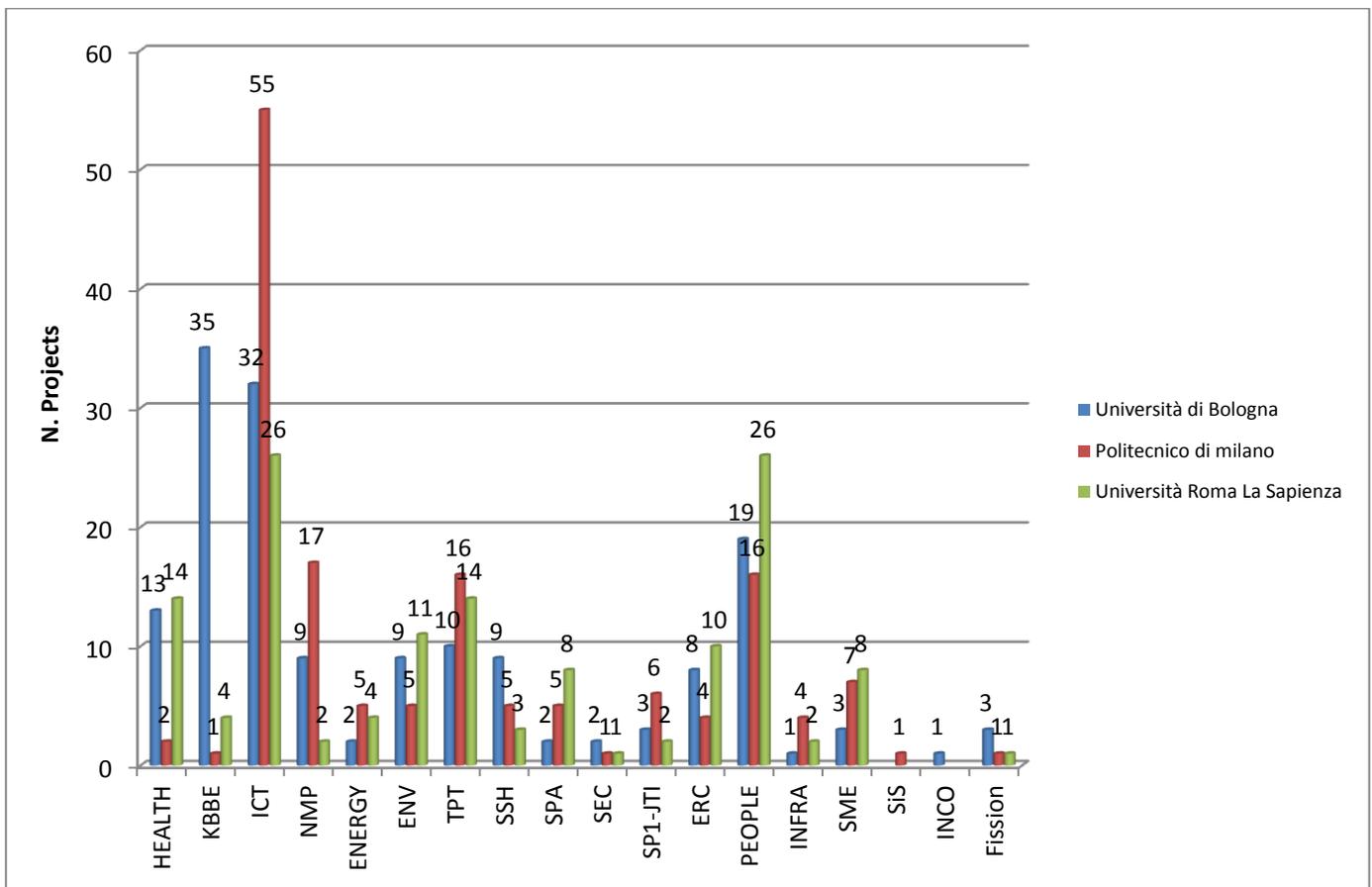
Source: elaboration through CORDA, Jan. 2012.

Source: elaboration through CORDA, Jan. 2012.

Source: elaboration through CORDA, Jan. 2012.

Conclusions

The concept of Regional Innovation Strategy for smart specialisation is the evidence of the growing interest in innovation policy for a smart economic growth. Place-based innovation policies have become crucial determinants of competitiveness, success of firms, cities, regions and nations as a whole. In this respect, Smart Specialisation Strategy, although it is not a brand new concept, legitimately emphasises the overarching role of **innovation and knowledge creation** building on competitive advantages at **micro level**. Such innovation-driven process is supposed to have an impact not only in relation to innovative commercial products and services but also in terms of **social effects**. Regional Innovation Strategies should therefore be framed while bearing in mind both the **necessity of boosting competitiveness** and **the need to ensure territorial cohesion**. The design of innovation strategies which synergise with **territorial cohesion policies** will be most probably among the toughest challenges ahead.

In this scenario, strategic and long-term **public investments in research and education** will be critical for regional innovation strategies to be effectively executed. To this aim, more stability of funding for research and education is extremely needed in order to implement policies and measures on multi-annual basis rather than a "one-off event".

In the smart specialisation concept the development of **talents and human capital** have been placed at the heart of the process. Yet, according to the OECD statistics above sketched out, levels of public expenditure in education confine Italy well behind the OECD average. National funding, particularly in period of crisis, should keep investing into a **feed for thought** framework through which regions can develop their local talents and therefore build their unique competitive advantages.

The cooperation between **Industry-University-Public sector** will definitely be a strategic asset. Despite the recommendations of the Commission concerning the NRP[34], the need to enhance private sector contribution in R&I still represents a major problem. It is enough to look at the data from the Innovation Union Scoreboard 2012 to reveal that firms investments in R&I as well as availability of Venture Capitals have been declining between 2007-2011. A balanced **mix of direct and indirect R&I support measures** should be rethought accordingly.

The quick overview on regional participation in FP7 shows that two leading regions (Lazio, Lombardia) receive some half share (47%) of EU contribution. The other regions, excluding a few exceptions, still have to develop appropriate strategies to compete for FP7 funding. **Regional Innovation Strategy for smart specialisation** is likely to represent the first step towards supporting less advanced regions to capture their unique potentials along the research and innovation value chain. Similarly, a well designed strategy can help more advanced regions to reposition themselves at a higher point along the best practices productivity frontier. **Effective collaboration strategies** in terms of operational effectiveness and mutual reinforcing strategic objectives should thus be endorsed by regional governments, universities, research institutions and the private sector. This will be among the core issues to tackle in order to support the "smart specialisation strategy" throughout the discovery process.

The success or failure of regions to frame results oriented innovation strategies will largely depend on their capacity to set out a **long term vision.** The vision has to be thoroughly embedded into a **comprehensive strategy** able to **identify regional road maps** as well as to **define common rules and procedures** to pave the way towards a more effective policy-mix. At the operational level new expertise (e.g, **financial engineering and public private partnership innovative schemes)** should be envisaged. In this scenario, **Regional Innovation Partnerships (RIP)** might be a first practical

---

[34] Council Recommendation on the National Reform Programme of Italy, 7.06.2011 Brussels.

attempt to tame complexity by setting the framework conditions for the public-private

sector to work together.

References

Books

- J.Stimson, R.Stough, H.Roberts, Regional Economic Development: analysis and planning strategy,Springer, 2010;

- M. Porter, The competitive advantage of Nations, The free press, 1990;

Articles & Reports

- Council Recommendation on the National Reform Programme of Italy, 2011 Brussels;

- H. Chesbrough, W. Vanhaverbeke, Open Innovation and Public Policy in Europe, Science Business, 2011:

- European Commission, Regional Innovation Scoreboard 2011;

- European Commission, Regional Innovation Monitor 2010;

- European Commission, Regional Competitiveness 2010;

- World Economic Forum, Global Competitiveness Report 2011-12;

- Council Recommendation on the National Reform Programme of Italy, 7.06.2011 Brussels;

- DG Regional Policy, Working Paper, 2010;

Websites

- http://ec.europa.eu/research/innovation-union/index_en.cfm

- http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/index_en.htm

- http://af.reuters.com/

- http://ec.europa.eu/regional_policy/information/pdf/brochures/rfec/2011_smart_growth_en.pdf

- http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/index_en.htm

- http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm

- http://ec.europa.eu/europe2020/index_en.htm

- http://ec.europa.eu/research/innovation-union/index_en.cfm

- http://ec.europa.eu/regional_policy/information/pdf/brochures/rfec/2011_smart_growth_en.pdf

- http://iri.jrc.es/papers/WP%2005-2011%20final.pdf

- http://ipts.jrc.ec.europa.eu/activities/research