



Good Practices on Regional Research and Innovation Strategies for Smart Specialisation

Regional Innovation Clusters

Piedmont Region (IT)



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1 Basic Data of the Practice

1.1 Title of the practice: Regional Innovation clusters

Industrial policy instrument to support enterprises competitiveness, to encourage knowledge sharing and the convergence of investments on trajectories of products and innovative services development.

1.2 Precise theme/issue/policy tackled by the practice

X Clusters

- Innovation friendly business environments for SMEs
- Research infrastructures, centers of competence and science parks
- Universities
- Digital Agenda for Europe
- Key enabling technologies
- Cultural and creative industries
- Internationalisation
- Financial engineering instruments
- Innovative public procurement
- Green growth
- Social innovation

Process of regional change initiated:

- X transition modernisation
- diversification radical foundation of a new domain

1.3 Geographical range of the practice

Country Italy – North-western ITC1 (Piedmont Region) first-level administrative divisions of the state (NUTS 2).

The practice affects the whole territory of the Piedmont Region with a territorial extension of 25.402 square kilometres (8, 4% of the national territory), a population of about 4 400 000 and with a density 175 inhabitants per square km.

1.4 Contact details

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1.5 Sources of information

Website: <http://www.regione.piemonte.it/innovazione/poli-di-innovazione.html>

Report: http://www.regione.piemonte.it/industria/por/dwd/Val_Rav_annualita.pdf

Presentation: http://images.it.camcom.it/f/Materialeconvegna/83/832_ITTUCCP_1772012.pdf

Press review:

<http://www.regione.piemonte.it/innovazione/poli-di-innovazione/rassegna-stampa-poli-innovazione.html>

2 Introduction: Regional Smart Specialisation Background

The economic structure of Piedmont is worldwide renowned for its automotive industry (the Region's driving sector), although in recent years the regional economy has turned towards an increasing diversification in different sectors especially to those linked to the knowledge economy. Nowadays, beside the automotive sector, Piedmont's economy includes other strategic sectors such as robotics, ICT, renewable energies, chemical, environmental technologies, design, aerospace, life science, pharmaceuticals-health, and logistics.

Piedmont is one of the Italian regions investing more in research and development with an expenditure in R & D relative to GDP (1,83 %) - with a prevalence of the role of private research - exceeding the target set at the national level for 2020 (1.53%) and ranking above the national average of 1, 26% (2009).

SMEs play a vital role in the economic and social make-up of the region. These streamlined and fast-acting businesses have strong territorial roots, but their flexibility, propensity for innovation, wealth of know-how and use of high quality processes and production techniques has also made them representatives for Made in Italy worldwide. A key factor in the competitive edge enjoyed by Piedmont's SMEs is the special relationship between businesses and the local territorial system, based on links with other companies in the area and with the local social system, including the availability of suitably qualified and professional human resources.

The contribution of human resources to the knowledge economy in the Piedmontese system with reference to the number of employees engaged in research and development (R&D) gives an idea of the scientific and technological activity. The Piedmont Region, with 5.2% per 1.000 inhabitants ranks fourth among the Italian regions, above the national average, which saw 3.8 employees per thousand inhabitants.

Furthermore, with the 34.3% of firms that have introduced innovations in the period 2006-2008 the Piedmont Region ranks fourth among the Italian regions, slightly below the national average (37.6%) and the European one (36 , 3%). Another indicators that confirms the Piedmont Region as one of the Italian leader in the field of R & D is the number of patents: 138.6 per million inhabitants on a national average of 83.6 (2007).

The spread of innovative technologies is considered as an essential element for the economic development of Piedmontese businesses, and has always been one of the mainstays of the policies implemented by Regione Piemonte with European structural funds. Over the years, different tools have been created to promote and develop the transfer of technology and access to research by businesses: from important specific projects targeting SMEs, to the creation of the Science and Technology Parks, Technology Platforms and the recently created Innovation Clusters (on which focuses the good practice).

In 2008 Piedmont Region's Research and Innovation strategy moved towards a policy of specialisation taking into account the assets and human skills of the territory, with the goal to foster, particularly, research and innovation of SMEs and give a boost to economic development in each part of the vast regional territory.

Piedmont region, by the Regional Committee Resolution of may 5th 2008 (DGR n. 25-8735), outlined the functions and the goals of the "Innovation clusters" and a first identification of the technological sectors

According to the above mentioned Resolution 12 innovation clusters - each with a technological sector, a territorial area and a managing subject of reference, both in traditional sectors as well as high-tech sectors in order to support the competitiveness of SMEs - have been established in the following areas:

- 1.AGRO-FOOD;
- 2.BIOTECHNOLOGY AND BIOMEDICAL ENGINEERING;
- 3.SUSTAINABLE CHEMISTRY;
- 4.NEW MATERIALS;
- 5.DIGITAL CREATIVITY AND MULTIMEDIA;
- 6.SUSTAINABLE ARCHITECTURE AND HYDROGEN;
- 7.RENEWABLE ENERGY AND BIOFUELS;
- 8.FITTINGS, SYSTEMS AND COMPONENTS FOR RENEWABLE ENERGIES;
- 9.RENEWABLE ENERGIES AND MICRO HYDRO;
- 10.ICT;
- 11.MECHATRONICS AND ADVANCED PRODUCTION SYSTEMS;
- 12.TEXTILE.

In particular 4 of these clusters are devoted to energy system. The main field of interests were: micro-hydro systems, biomass and bio fuels, hydrogen and fuel cells, energy efficiency in buildings. Their role was to boost the activities of regional enterprises, R&D centres, Universities in the context of clean economy, in order to get new opportunities and competitiveness at transnational level. In the cadre of Horizon 2020 and of the research and innovation strategies for smart specialization the Region is preparing a new call in order to favour the development of just one Hub, specialized in the context of the Clean technologies for renewable energies and energy efficiency.

3 Description of the Practice

3.1 Executive summary

Piedmont was the first Italian region to establish Innovation Clusters, new industrial policy instruments to support the competitiveness of enterprises that promote the sharing of knowledge between businesses and the convergence of investment on trajectories of development of innovative products and services.

12 technological sectors of particular interest have been identified taking into account the individual vocations of each territory and of strategic sectors of the Piedmont economy (traditional ones as well as high-tech in order to support the competitiveness of SMEs): agrofood, renewable energy and biofuels, sustainable architecture and hydrogen, sustainable chemistry, ICT, mechatronics, renewable energies and mini hydro, new materials, plant engineering, systems and components for renewable energy, textile, digital creativity and multimedia, biotechnology and biomedical.

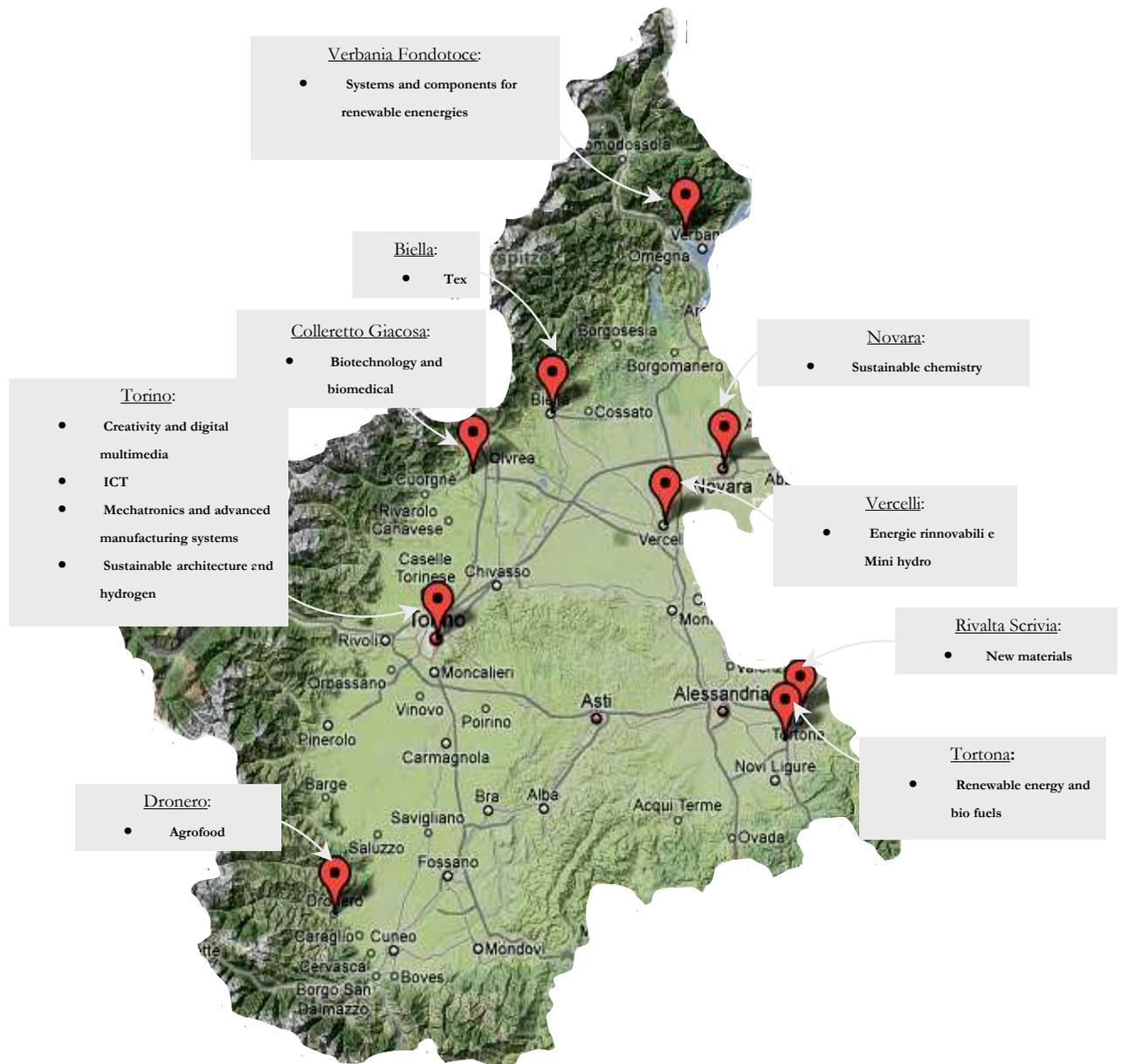
The Clusters act as instruments of synergic coordination between the different actors involved in the innovation process. Their main objective is to promote innovation, through the interaction and the exchange of knowledge, experiences and information as well as the use of common infrastructures and services with high added value. In addition, the innovation clusters have the challenging role of identifying enterprises technological needs in order to guide future regional policy actions in support of research and innovation. The reference territories are the areas in which the infrastructures of the cluster are localized, provided that each cluster operates on a regional scale.

With this initiative, the Piedmont Region is facilitating the networking between the SMEs and between the needs of companies and the supply capacity of the regional research system. The objective is to promote innovation, providing more than financial support. The Cluster policy wants to support the share of competences in a flexible, demand and time actuated way and to contribute concretely to technology transfers, to the creation of networks and the spread of information between companies. In a tighter market and location competition, cluster policy aims to enhance the local competitiveness to cause innovation leaps, to strengthen scientific, technological and industrial specialization patterns and help firms and entrepreneurs within clusters move up the value chain through innovation and greater specialization.

The actions planned by the Innovation Clusters concern the promotion of transfer of technology / knowledge and services to SMEs, support for the creation of innovative enterprises (spin-offs and incubators of innovative enterprises), access to international networks of scientific research and attraction of productive investments in the region, in relation to the specific issues of interest. In particular Clusters provide technology transfer and animation services by bringing together SMEs - involved in high technology or who aspire to increase their capacity of innovation – with the research and technology institutes and with other SMEs or other companies as well as innovation intermediaries that integrate the Cluster.

Overall the 12 clusters involve about 1,400 enterprises of which about 28% work in the field of Clean Technologies.

Innovation Clusters of Piedmont Region.



3.2 Key features of the practice

- Establishment of Innovation Clusters promoted by large aggregation of independent companies – mainly small and medium sized enterprises (possibly supplemented by research organisations) managed by a Cluster Managers’;
- co-financing investments made by the Cluster Managers’ and (temporarily) the operating cost of the cluster;
- provide and co-finance high qualified services and activities to the associated subjects of the clusters;
- co-finance preparatory and functional activities in order to foster enterprises competitiveness;
- financial support for the creation and development of innovative enterprises;
- co-financing of research and development projects the associated subjects.

Elements of innovation:

- Support to the construction of new production chains, new technologies, new processes and new models: the smart specialization of the territory;
- centrality of animation of the ClusterManagers’;
- attention to small and medium-sized enterprises;
- comparisons and direct negotiation with the Authorities of regional management: the flexibility of programming and procedure;
- mechanisms for ongoing and ex-post evaluation and resource allocation based on the actual quality of operations.

3.3 Detailed content of the practice

Piedmont Region has identified 12 Innovation Clusters that match to 12 technological domains which face the new horizons in research and innovation.

The institution of the Innovation Clusters has been financed in the Regional Operational Programme 2007-2013 (ERDF funds) whose main objective is to support the development of adaptive capacity of the regional system to sudden changes induced by the interdependence of the economic systems, strengthen the capacity for innovation and facilitating the matching to the European areas with higher living standards. The institution of the Innovation Clusters is included in the axis 1 of the Programme called "Innovation and Productive Transition" which has the operational objective of promoting the innovation through strengthening the processes of technological knowledge and promoting the cooperation between universities, research centers and companies.

The Innovation Clusters provide high added value infrastructures and services and interpret the technological needs of enterprises in order to address the regional policy in the research and innovation field. They are structures of synergic coordination between different players (private enterprises and research centres led by a managing authority identified through a public call for constitution, enlargement and management of the Innovation Clusters) of the innovative process of a specific technological domain with the following primary goals - that refers and put in to practice the contents of the articles ERDF Regulation 1080/06 (5.1a,5-1b,5.2c and 5.3b) - :

- transpose and interpret the technological needs of companies with the aim to target on relevant technological specific problems the regional actions to support research and innovation;

- encouraging the share of knowledge and the convergence of investments in new trajectories of development of innovative products and services as well as contribute to the sectorial transfer of technological knowledge;
- promote investment and joint use of facilities, laboratory equipment and infrastructure of research, experimentation, testing and certification as well as intangible assets;
- facilitate the mobility of human capital between undertakings or between enterprises and research system as well as the attraction of highly qualified human resources;
- encourage the participation of enterprises to the most advanced industrial and scientific research community and international networks in the specific domain;
- encourage enterprises, in particular SMEs, enter the sources of scientific and technological knowledge of industrial interest;
- provide specialized service with high added value that promote and encourage the appropriation of the value of innovation by the firms aggregated to the cluster;
- foster the participation of Cluster SMEs' to EU research development and innovation funds;
- understand the educational needs of enterprises with the aim of improving their technological and managerial skills, addressing regional supporting actions to specific needs;
- encourage the development of new business also through business incubator;
- promote the process of internationalization of companies associated with the cluster through joint actions aimed at promoting and marketing of the product;
- facilitate the attraction of productive investments in the Region, in relations to the specific issues of interest to the cluster.

The Innovation Clusters are territorially based. Every geographic area has an identity, vocation, specific characteristics and experience of its own that have grown up over time, through the deep-rooted relationship between man and the environment, work and interchange with the surrounding reality and the 12 technological domains have been identified on this basis.

The technological domains cover alongside the manufacturing specialisations - a heritage to be enhanced and updated in order to tackle the challenge of competition on a European and international scale – other specializations in the fields of agrofood, ICT, bio-technology, renewable energy and eco-sustainability.

In particular almost the 50% of the Innovation Clusters are working in the field of Clean Technologies (Renewable energy and biofuels, Sustainable architecture and hydrogen, Sustainable chemistry, Mini hydro and renewable energy, Plant, systems and components for renewable energy) forming a critical mass on which the Piedmont Region is reasoning in terms of regional smart specialization strategy. Piedmont Region identifies the Smart&Clean technologies as opportunity to trigger the process of structural change through the renewal and revitalization of the Piedmontese economy and its portfolio of expertise. The regional strategic Plan for Competitiveness 2007-2015 identifies the following trajectories: Smart&Clean Nanomaterials, Smart&Clean Energies, Smart&Clean Automotive, Smart&Clean Manufacturing.

Recently (May 2012) many Managing Authorities of the Piedmontese Innovation Clusters attended the National call for funding¹ addressed to the constitution of National Technological Clusters with an interdisciplinary and international approach and with the aim of integrate research-education-innovation with reference to a limited number of technology areas and cross-application (Green chemistry, Agrifood Technology areas of life, Life sciences, Technologies for smart communities, Equipment and systems for the mobility of the earth's surface and marine, Aerospace, Energy, Factory clever) within which to bring together into a coordinated and comprehensive way the best experiences and expertise existing in the country.

The Piedmont Region is involved in different cooperation projects between clusters (CLUSTERCOOP², CLUSTRAT³) in which involves the aggregated to the Innovation Clusters.

¹ <http://attiministeriali.miur.it/anno-2012/maggio/dd-30052012.aspx>

² ClusterCOOP project aims to create and improve the framework conditions and support for trans-national cooperation between clusters of the Central Europe. <http://www.regione.piemonte.it/innovazione/ue/progetti-regionali/progetto-clustercoop.html>

The Innovation Cluster also build relationships outside the region, for example:

- POLIGHT⁴ that offers a service for searching potential partners in the field of energy and environment in 45 European countries and beyond. The service allows to search technological and commercial profiles and promote the participation of regional enterprises in EU national and regional programs for innovative and applied research;
- BIOPMED⁵ that stimulates the activity of networking with partners at European level for projects aimed at technology transfer and the creation of tools to companies in the sector;
- PST Valle Scrivia that collaborates with the regional body CEIP (foreign center for internationalization) realizing studies and setting up marketing strategies and moves to attract new national and international investments⁶.

3.4 Bodies and stakeholders involved

Innovation Clusters

Groups of independent businesses (small, medium and large) and research organisms concentrated in specific sectors and environments, and coordinated by a Managing entity.

Actors involved

Regione Piemonte:

- Identifies among the main objectives of the "Innovation poles" measure support for programs of activity able to catalyze and intercept trend of innovation and business with high potential and have a significant impact on the business system of SMEs;
- identifies the Cluster Managers' through the examination of the applications received and Annual Plans presented;
- assigns the contributions to the cost of investment and operation incurred by the Cluester Managers' and provides funding on the basis of the expenditure accounted for and eligible;
- carries out, assisted by the Evaluation and Monitoring Committee (composed of regional representatives, officials of Finpiemonte Spa - Company House in the Piedmont Region - and external experts), verification in progress about the proper functioning of Innovation Clusters and the work of Clsuter Managers'.

Evaluation and Monitoring Committee:

- composed of regional representatives and independent experts manages the direct negotiation between the Committee and the Cluster Managers' for the determination of the budget to be allocated to each Cluster and the sharing of initiatives.

Cluster Managers

- are the means of regional guidelines, supporting businesses increasing the number of subscribers to the Cluster, interacting with the Piedmont Region, pointing out new technological chains on which to assume new investments;

³ CluStrat project aims to develop and test a strategy on new cluster concepts in support of emerging economic sectors, technologies and cross-sectoral themes, through policy dialogue at regional, national and transnational level, which is the framework support for a process of exchange, learning and decision-making. <http://www.regione.piemonte.it/innovazione/ue/progetti-europei/clustrat.html>

⁴ http://www.polight.piemonte.it/mercato_europeo.aspx

⁵ http://www.biopmed.eu/index.php?option=com_content&view=article&id=214&Itemid=397&lang=it

⁶ <http://www.pst.it/attivita.html>

- received a strong mandate of responsibility from Piedmont Region not only to collect the individual projects that emerged from those aggregates, but to support businesses in the design of innovative projects, encourage contact between (intra-or extra Polo), submit a coherent and integrated portfolio of activities (in the medium term) and pre-select effectively the activity to be included in the program of the Cluster. Their role is to create the conditions to allow the associated companies to access networks and structures designed to organise and spread in-novation, and to provide a range of services with a high added value (acquisition of patents and protection of intellectual property rights, collective marketing and promotional activities for internationalisation, management training, etc.) as well as supporting the establishment of innovative businesses (start-up).
- are responsible for the preparation and submission of the Annual Plan of Projects and Services;
- in many cases, the entities managing the various Clusters are the Technology Parks⁷, while the others are consortia, foundations or service centres set up within business associations.

Subjects aggregated to the Innovation Clusters

- are composed of SMEs, Companies, Universities and Research Organisations.

⁷ Six technology parks have been created in Piedmont, each addressing a specific context. The Tecnoparco del Lago Maggiore (Lake Maggiore Technology Park) addresses the development of materials and of alternative sources of energy, the Turin Environment Park works in “green” technologies and those related to hydrogen and plasma, and the Tortona PST combines experience in the field of telecommunications with activities related to renewable energy and biofuels. The other parks develop vocations that already existed in the area: the Bioindustry Park “Silvano Fumero” therefore focuses on life science and biotechnologies, Tecnogrande of Dronero supports the activities of SMEs in the agri-food industry, particularly evolving ICT tracking systems, and finally, the Virtual Reality & Multimedia Park in Turin draws on an outstanding century-old tradition of cinema production in the city, transforming it into cutting-edge virtual technology.

3.5 Timescale and maturity

In 2009 the Regional authorities of Piedmont established the Innovation Clusters. By the end of the same year the first annual programs have been submitted. The Cluster managers' presented their strategic plan which included the development trajectories and the cooperative project to be financed.

At the end of the phase of evaluation of the projects, carried out by Evaluation and Monitoring Committee, supported by scientific experts, 148 projects have been financed.

The total financial resources assigned to the first Annual Program is equal to 52 million Euros, a part of which (approx 2 M euros) were destined to the acquisition of research and innovation services and for feasibility studies.

From 2010 facilities for feasibility studies and for the acquisition of research and innovation services are granted through specific calls. The table below shows the different services offered and the number of the request that has been financed for each type of service.

Table showing the number of requests of services in the different calls

SERVICES	1st Annual program	1 Call 2010	2 Call 2010	Call 2011	Call 2012
Intellectual property management	5	13	8	8	5
Technology intelligence	1	4	6	8	41
Support to conception and marketing of new products and services	5	11	7	11	31
Support to design use	/	16	5	9	21
Support to innovative start-up businesses	9	4	4	2	5
Open innovation (international knowledge networking)	/	4	/	/	/
Research and innovation qualified jobs mobility	1	8	14	/	21
TOTAL	21	60	44	38	124

In 2010 the first Call for facilities for feasibility studies and for the acquisition of research and innovation services was launched with a financial budget amounting to 5 million euros; additional 4 million euros was the financial budget for 2010 second intermediate call destined to research and innovation services acquisition.

The second Annual Programs were submitted by the end of 2010, the financial budget that Piedmont Region destined to fund R&D projects was 35 million euros. The number of projects, selected by the ECM, that have been financed was 95.

The 2011 First Intermediate Call for facilities for feasibility studies and for the acquisition of research and innovation services launched in mid 2011 had a financial budget of 2.200.000 Euros.

For the third Annual Programs, submitted in 2011, the financial resources kept on lowering, in accordance with the regional policy to diminish, over the year, the regional aid to the clusters. The total budget for the 3rd Annual Program is 24 million euros and the number of financed projects is 82.

In 2012 two different calls have been launched, one for the acquisition of research and innovation services and one for the feasibility study, with a financial budget respectively of 2 million euros and 1 million euros.

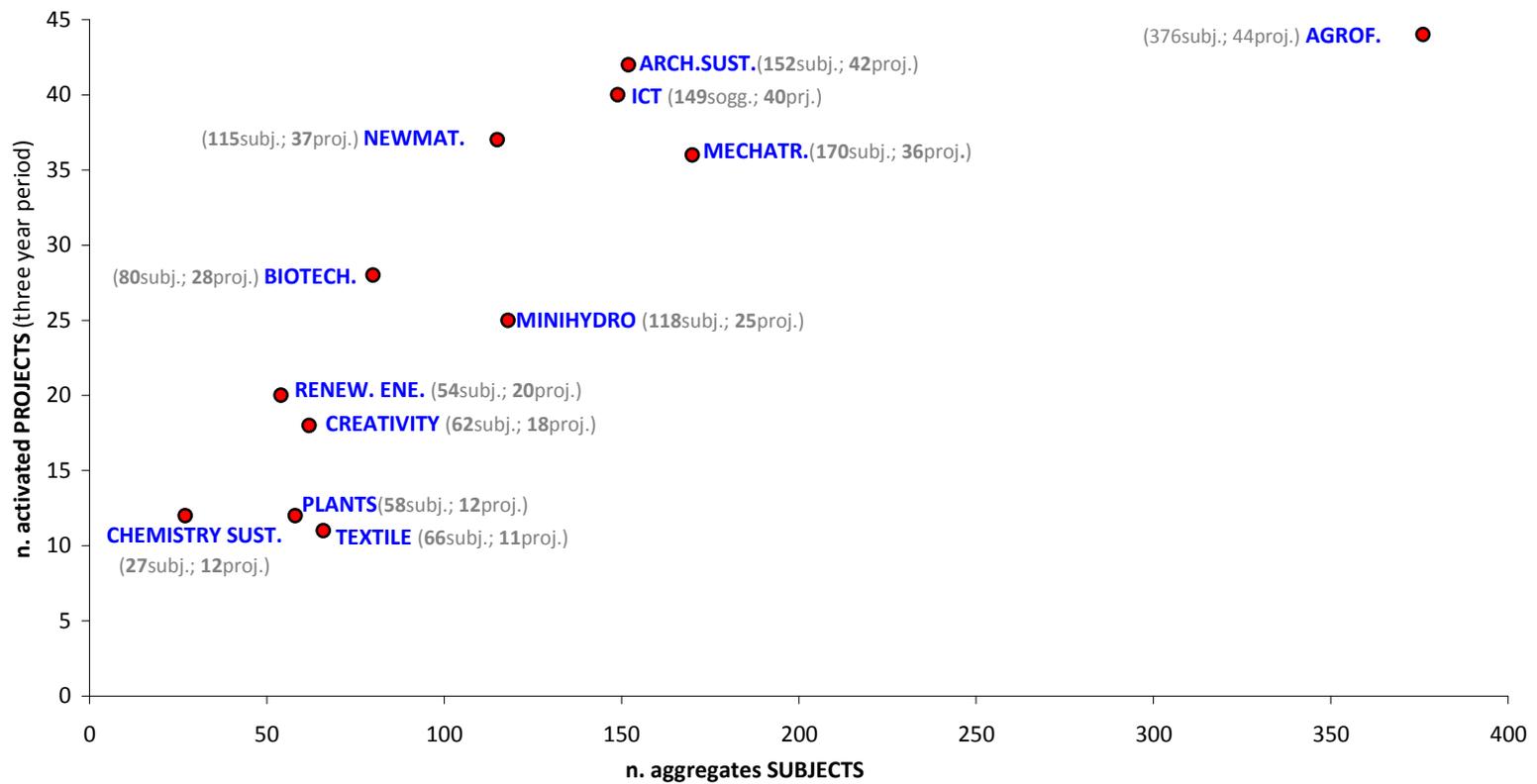
In November 2012 the specifications for the fourth Annual Program have been issued and the phase of submission of the Programs is still in progress.

Statement summarizing the 1 st, 2 nd and 3 rd program – projects.

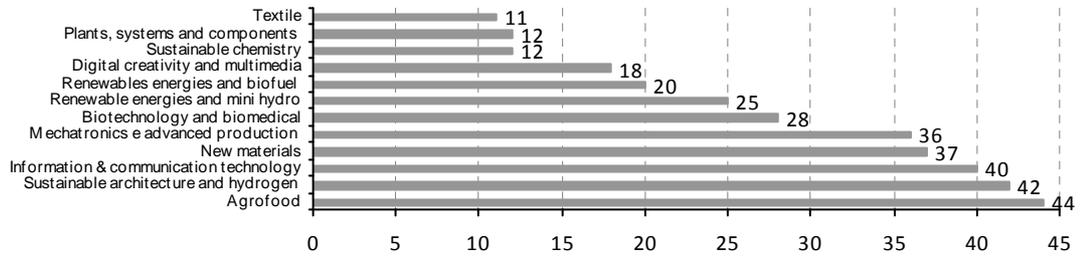
TECHNOLOGICAL DOMAIN OF THE INNOVATION CLUSTER	TERRITORY OF REFERENCE	NUMBER OF ASSOCIATED SUBJECTS	% TOTAL INCREASE (1°-3° year)	TOTAL BUDGET FOR RESEARCH AND INNOVATION PROJECTS in 3 years - (million €)	NUMBER OF RESEARCH AND INNOVATION PROJECTS FINANCED IN 3 years
AGRO-FOOD	astigiano e cuneese	376	69%	9,9	44
SUSTAINABLE ARCHITECTURE AND HYDROGEN	torinese	152	46%	13,28	42
BIOTECHNOLOGY AND BIOMEDICAL	canavese e vercellese	80	31%	7,3	28
SUSTAINABLE CHEMISTRY	novarese	27	35%	5,92	12
DIGITAL CREATIVITY AND MULTIMEDIA	torinese	62	44%	4,24	18
RENEWABLE ENERGIES AND BIOFUELS	tortonese	54	29%	9,38	20
RENEWABLE ENERGIES AND MICRO HYDRO	vercellese	118	39%	9,83	25
ICT	torinese e canavese	149	91%	13,14	40
PLANTS, SYSTEMS AND COMPONENTS FOR RENEWABLE ENERGIES	verbano-cusio-ossola	58	100%	3,74	12
MECHATRONICS AND ADVANCED PRODUCTION SYSTEM	torinese	170	113%	21,45	36
NEW MATERIALS	alessandrino	115	39%	8,24	37
TEXTILE	biellese	66	57%	4,82	11
TOTAL		1427	60%	111	325

- Innvation Clusters -
Aggregates SUBJECTS and activated PROJECTS in the Annual Programs

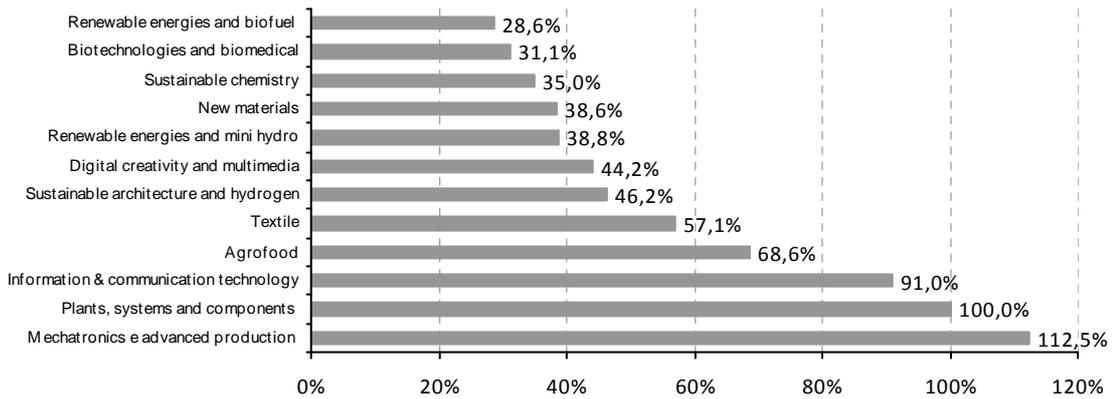
(tot. 1.427 subjects e 325 projects)



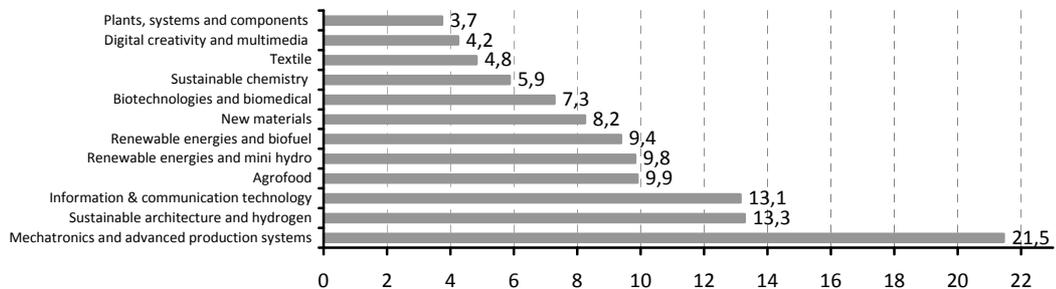
Innovation Clusters - Number of projects activated in the three Annual Program
(tot. 325 projects)

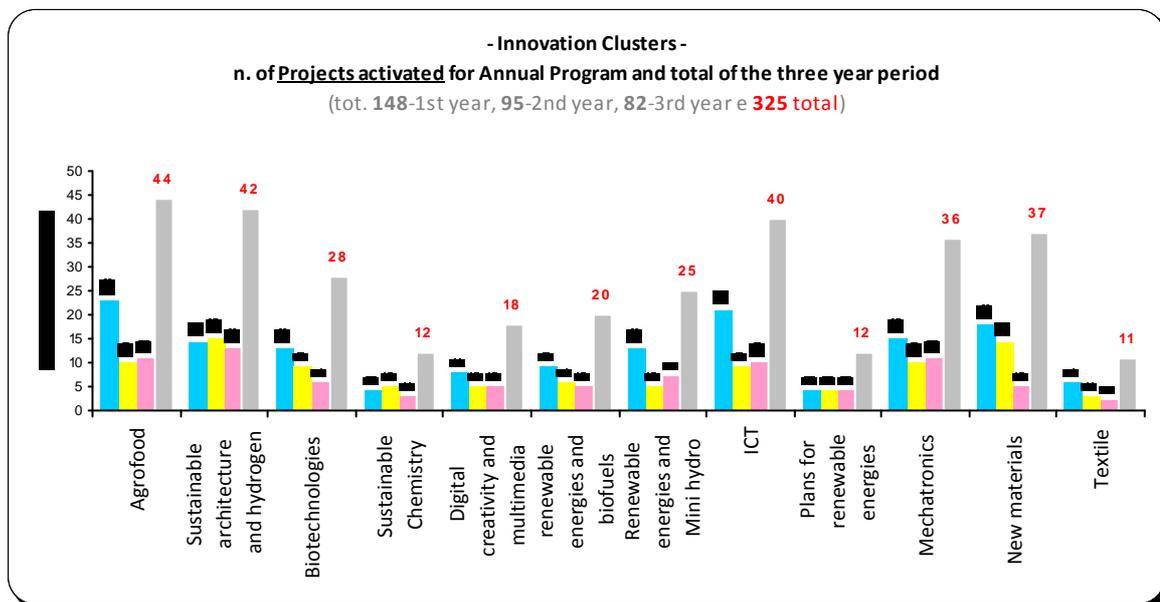


Innovation Clusters - Growth rate of AGGREGATES SUBJECT from the 1st Annual Program till now
(tot. 1427 projects)



Innovation Clusters - Budget (mln €) assigned budget in the three Annual Programs
(tot. 111,2 mln €)





3.6 Legal framework

The Innovation Poles are established in the form of temporary purpose association⁸ or consortium and operate under the guidance of the Cluster Manager. Any company can join the Cluster or use its services regardless of their location in the Region.

Community framework for state aid for research and development and innovation (2006/C 323/01)
 Regional Law n. 4/2006
 Operational Regional Program/ERDF 2007-2013

3.7 Financial framework

Until today the budget (ERDF) destined to finance the Innovation cluster is 120 million Euros, subdivided in direct funding to Cluster Managers' and facilities for the aggregated subjects:

- 9 million € as aid to the Cluster Managers' (Investment aid for the establishment and expansion of the cluster - Operational aid for the animation of the cluster);

The maximum aid intensity is 15% of the total cost incurred by the management subject. In the case of aid being granted to an SME, the maximum intensities is increased by 20 percentage points for aid granted to a small enterprise and by 10 percentage points for aid granted to a medium-sized enterprise.(2006/C 323/01).

Investment aid to the Cluster Managers' are granted up to 50% of the eligible costs incurred each year, for five years.

- 111 million € as grants to the Custer aggregated subjects (grants for feasibility studies, research, development and innovation projects, qualified services for innovation).

The aid intensity for research and innovation projects follows the EU regulations and is 35% for large enterprises (in cooperation with SMEs), 40% for SMEs (acting alone), 50% for SMEs (acting

⁸ The temporary purpose association consists of the stakeholder involved through the conclusion of a charter in the form of special collective mandate, free of charge, with representation of one of them said representative or leader.

in cooperation) and 60% for Research Organisations provided that the organisation acts in cooperation with SMEs and support at least the 10% of the total projects.

Given that all the grants for the Innovation Clusters measure do not cover the total expenditure of the beneficiaries and considering the percentages of intensity aid, we can assume that next to a public investment of 120 million Euros, roughly a private investment of 100 million (or more) in research and innovation has been made or is going to be made by local SMEs, large enterprises and research organisations.

The allocation of resources is based on Annual Plans - submitted by the Managers of Innovation Cluster - assessed at the level of strategy and overall portfolio of activities, trajectory design and development of individual projects proposed for funding. The Annual Plans are also used in the overall evaluation of the work of the Cluster Managers' in terms of ability to combine business and resources around well-defined planning trajectories and having a potential for innovation and impact appropriate to the objectives that the Region defined in activating the Innovation Clusters.

4 Monitoring and Evaluation

During the three-year period of activities the Innovation Clusters are grown of 60% aggregating approximately 1400 businesses (including the four Piedmont Universities and the most important Research organisation operating in the Region⁹), with an average of about 100 subjects aggregated by Cluster and the involvement of about 95,000 employees.

The projects funded in the period are 325 with a total budget of 111 million euro, of which about 38% dedicated to the field of Clean Technologies, which aggregates approximately 400 companies and about 1/3 of the total projects including innovative investment, eco-activities aimed at the promotion of products and processes that minimize the impact of economic development on the components of the environment.

The Evaluation and Monitoring Committee (EMC) shall evaluate the Annual Program presented by the management subjects. The Annual Programs are evaluated with regard to the overall strategic activity, the development trajectories and the single projects to be financed.

Projects are evaluated by technical experts on the basis of an evaluation grid that requires the application of the same criteria already used by the Cluster Managers' in the pre-assessment of the initiatives to be included in the program

Each Cluster is yearly monitored and evaluated by EMC considering the following indicators:

Ex-ante indicators:

- Associated subjects' extent of involvement;
- Attractiveness of the cluster;
- Planning skill of the cluster;
- Program economic-financial congruence;
- Significant presence of SMEs;
- Submission of inter-cluster projects and their quality;
- Activities and international collaboration;
- Potential impact and expected results;
- Planning coherent with the territory.

Ex-post indicators:

- Average quality of the projects submitted;
- Average quality of the services requested.

⁹ 85 Departments, more than 200 Research Centres, 180 Laboratories and 6 Scientific Parks.

Considering the evaluation of the 3rd Annual Program, as well as the previous ones, made by the ECM, each Cluster has got a satisfying score ranging from 68 to 96, out of a maximum of 100.

5 Lessons Learnt

The Piedmont Region through the establishment of Innovation Clusters, intended to invest on facilitators of innovation and aggregators to support SMEs in the difficult process of selection, specialization and monitoring of new technological opportunities or business.

Among the subjects covered by the 12 Innovation Cluster, there are topics that could facilitate further aggregations to overcome the fragmentation of experiences and approaches enabling a better integration at Regional level. For example Five Innovation Cluster are related to the Clean Technologies sector (sustainable architecture and hydrogen, sustainable chemistry, renewable energy and bio-fuels, renewable energy and mini hydro plants, systems and components for renewable energy) and other Clusters cover complementary topics (for example ICT and creative digital and multimedia).

A possible future federation of the existing Clusters with the institution of few new Hubs shall create the correct environment to better push the international competitiveness of the enterprises and a better valorisation of the competences present in the Region, helping the transition and specialization of the productive system in order to strengthening regional innovation systems, maximising knowledge flows, spreading the benefits of innovation throughout the entire regional economy and using more efficiently the resources in times of tighter budgets.

The future challenge will be to prevent that such facilitators of innovation become passive structures and /or without a key role. The facilitation of the condition for their self-sustaining and to continue to provide valuable services will be the most relevant point.

The institution of the Innovation Clusters can be considered as a success of policy learning because:

- it has been a pilot experience carried out by Piedmont Region as first Italian region and facilitated the way for other Italian Regions (eg. the Liguria and Tuscany Region) building up a wealth of transferable experience;
- there has been a positive response by beneficiaries to the measure (process interactive, regionally-driven and consensus-based);
- has enabled the collaboration of the SMEs in research projects;
- has stimulated innovative activities by promoting intensive interaction, the sharing of facilities and exchange of knowledge and expertise by contributing effectively to the technological transfer, networking and dissemination of information between the aggregated subjects.