

CeSPI

Centro Studi di Politica Internazionale

**THE REGIONAL INNOVATION SYSTEM
OF LATIUM**

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November 2007

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1. Innovation in the region of Latium

The regional scientific research context in Latium seems encouraging yet is also contradictory. On one hand, Latium is the Italian region with the highest concentration of R & D activity. At the same time, however, in terms of technology transfer, there are considerable critical issues preventing the regional production system from achieving full competitiveness both nationally and internationally.

In particular, the Latium region's strengths consist of the number of people employed in R & D (5.7 for every 1000 inhabitants), higher than the national average (2.8) and that of central-northern Italy (3.5)¹, and the supply of scientific research services, which is marked by the presence of numerous research centres and institutes (there are 218 research laboratories, 4 university centres of excellence, 48 research bodies and institutes, 10 universities, 2 science and technology parks and 1 technology district)².

Another strength is the good spread in the region of information technology. The available data shows a widespread use of ICT by Latium families. Indeed, in 2004 more than a third had access to the internet³ compared to the national average of 34.5% (37.2% for the regions of the Centre-North) which, however, was as high as 42% for the 25-member EU and no less than 45% for the 15-member EU. The figures relating to micro-enterprises (those having less than 10 employees) were also positive, with 59.5%⁴ of them having a personal computer, as against the national average of 57.8% and 58.7% for the central-northern regions. In line with the national figure, the distribution of broadband among businesses, which in Latium is 58.7%⁵, is little less than the 60.1% recorded in the central-northern regions. A strong growth rate has also impacted on internet usage on the part of enterprises with more than 10 employees⁶, with 33% (as compared with the national average of 25% and 27% for the regions of the Centre-North) of employees in Latium businesses using computers connected to the internet.

The major weaknesses of the Latium region include, in particular, a low level of expenditure on R & D, a low propensity towards innovation and a weak capacity for technology transfer. These aspects demonstrate the difficulty encountered by the regional system in reaching the Lisbon objectives, exacerbated by the negative trend recorded in the sectors considered between 2002 and 2004.

In 2004, spending on R & D by businesses in-house, by public institutions (including universities) and by private non-profit institutions, amounted to 2,674 million euro, of which over 50% was by public institutions, representing a decrease compared to 2002. Even business spending on R & D as a proportion of regional GDP went down between 2002 and 2004, going from 0.55% to 0.45%. Currently, the level of research expenditure incurred by businesses is only 24.2% of total regional spending on research, compared to a corresponding national figure of 47.8%.

The low propensity towards innovation of the Latium production system emerges clearly from the low level of patent activity and acquisitions of technology licences. Firstly, the level of regional patent activity is very low. Latium patents registered with the European Patent Office (EPO) only numbered 44 per million inhabitants, as compared to 82 nationally, 120 for the Centre-North, 133 for the 25-member EU and 156 for the 15-member EU. Added to this is the statistic relating to technology licence acquisitions, which in the case of the telecommunications sector revealed that 70% of businesses have not acquired any licence⁷.

Despite the high level of supply of scientific research services in the region of Latium, the regional production system is characterised by a poor capacity to draw any benefit from the available supply.

¹ Source: Istat, *Indicatori regionali di contesto e variabili di rottura*, 2006.

² Source: Italian Ministry for Universities and Scientific Research.

³ Istat, *Aspetti della vita quotidiana*, 2005

⁴ Istat, *Rilevazione multiscopo sulle piccole e medie imprese*, 2004

⁵ Istat, *Rilevazione sulle tecnologie dell'informazione e della comunicazione nelle imprese*, 2005

⁶ Istat, *Rilevazione sulle tecnologie dell'informazione e della comunicazione nelle imprese*, 2005

⁷ Cf. preceding footnote.

Indeed, the matching of the needs of the production system with the supply of R & D by universities and research centres (i.e. technology transfer) represents one of the most critical issues facing the regional innovation system. Added to this is a weak capacity for networking both between producers and consumers of research (for instance, between universities and businesses) and between research consumers themselves (for instance, cooperation between businesses). In this regard, even in the most innovative sectors such as the hi-tech manufacturing sector, there is a lack (higher than 65%) on one hand of relationships between businesses in this sector and universities and public and private research organisations and, on the other, of cooperation between businesses (higher than 53%).

It must also be noted that innovative processes tend to be concentrated in few sectors or sub-sectors (including IT, telecommunications and biochemistry) and involve medium to large-sized businesses.

Finally, the financial difficulties facing Latium enterprises should also be mentioned. According to available figures⁸, the return-on-assets ratio⁹ of businesses has gone down over a five-year period (from 9.5% in 2001 to 8.2% in 2004) while the debt-to-equity ratio¹⁰ has fluctuated at around 41.3%.

2. Innovation policies and instruments

An analysis of the regional innovation instruments shows that innovation-related interventions have resulted from both regional laws and European programmes and national resources (the Framework Programme Agreements).

As regards regional laws concerning innovation, they mainly aim to financially support innovation and include:

- Regional Law no. 2/85, which provides venture-capital assistance for SMEs in Latium (both to start-ups via venture capital assistance and to already-existing businesses through private equity contributions); and other financial interventions in favour of struggling small to medium-sized enterprises in Latium, in hi-tech and/or the so-called “new economy” sectors;
- Regional Law no. 23/86, established in order to grant incentives to small to medium-sized enterprises in Latium and used in the initial years almost entirely for projects relating to the introduction of quality systems in firms. It was later amended by revamping the lines of intervention to foster technological innovation processes, industrial research, pre-competitive development, the introduction of business and environmental quality systems and the introduction of mechanisms aimed at boosting e-commerce potential;
- Law no 598/94: This law provides for the grant of concessional finance for investment in the field of technological innovation and environmental protection;
- Law no. 140/97 on Innovation incentives. It's a regionally-adopted national law, aims to increase the level of competition of the production system by developing initiatives capable of driving reinforcement processes for local production systems, safeguarding and consolidating existing processes and encouraging the introduction of new technologies. In particular, the objective is to support businesses in order to facilitate investment in industrial research and pre-competitive development through an automatic tax incentive for research and development expenses incurred by industrial enterprises in the preceding financial year and charged to the relevant profit and loss account; and

⁸ Banca d'Italia, April 2006.

⁹ Earnings Before Interest and Taxes, Depreciation and Amortisation (EBITDA) over total assets. Banca d'Italia, *Centrale dei Bilanci, Anni 2001-2006*.

¹⁰ *Leverage*, calculated as financial debt over financial debt plus equity. Banca d'Italia, *Centrale dei Bilanci, Anni 2001-2005*.

- Regional Law no. 9/05 (art. 41) established the Scientific Research Fund in order to promote research development, technological innovation and, in particular, access to research results by businesses, so as to increase the level of competitiveness of the territory's production system. This fund is aimed at financing:
 - small to medium-sized enterprises with operational headquarters in Latium that submit applications for research projects together with universities and scientific research centres and, in general, all public or private actors who conduct research activities; and
 - universities and scientific research centres based in Latium and, in general, all public and private organizations conducting research activities, in order to pay research scholarships or other equivalent forms of allowance for new personnel in small to medium-sized enterprises operating within the region of Latium.

To date, for the period 2005-2010, the Latium region has allocated over 25 million euro to the region's Scientific Research Fund. In addition to this, the region has also co-financed neuroscience-related projects conducted by EBRI¹¹ (the European Brain Research Institute)¹², again pursuant to article 41 of Regional Law 9/05, to a total amount of over 9 million euro.

In the 2006 Budget Law, a fund for economic development, research and innovation was instituted with an allocation of 60 million euro over 3 years, through which the region:

- a) contributes, on the basis of agreements reached with the Ministry of Education, Universities and Research (MIUR), the CNR, the INFN, ENEA and the University of Rome – Tor Vergata, to the co-financing of the scientific project entitled “Free Electrical Laser” (to a maximum of 5 million euro each year for 2006, 2007 and 2008);
- b) contributes, on the basis of dedicated protocol agreements signed with universities and research centres in the Latium region, to co-financing initiatives to upgrade research laboratories, including their modernisation and the acquisition of plant and machinery (to a maximum of 8 million euro a year for 2006, 2007 and 2008); and
- c) contributes, on the basis of agreements with science and technology parks, to the co-financing of initiatives aimed at furthering the development of technological innovation within the region (to a maximum of 7 million euro each year for 2006, 2007 and 2008).

In addition to the existing instruments, a Draft regional legislative bill “for the promotion of research and development, innovation and technology transfer” has been submitted for approval by the Regional Council which could represent a significant turning point in the role played by the region in the promotion of innovation. This bill was presented by the previous Regional Minister for Economic Development, Research, Innovation and Tourism, Mr Ranucci, and is the first law of its kind. It deals with the relationship between the region, universities and research organisations and between the region and public administrations. It provides regional funding aimed at developing the region's production system, constituted for the most part by SMEs, and funds technology districts and centres of competitive excellence.

¹¹ www.ebri.it

¹² European Brain Research Institute (EBRI), a non-profit organisation, was founded and scientifically inspired by Prof. Rita Levi-Montalcini, who received the Nobel Prize in 1986 for the discovery of Nerve Growth Factor (NGF). EBRI's mission is to study of the role of the central nervous system, from the neurons to the whole brain, in health and diseases. EBRI's research aims to shed light on the molecular basis of neurological diseases, with a special focus on neurodegenerative diseases such as Alzheimer's, Parkinson's, Huntington's and ALS diseases, in order to develop new therapeutic strategies.

The bill seeks to foster the development of the regional research and innovation system by pursuing the following objectives:

- building a network of resources and actors and a stable connection between the research sphere, the production of goods and services, credit and the territory, integrating regional sectoral policies and public and private human, instrumental and financial resources; and
- developing the competitiveness of the regional production system by promoting the spread of innovation, facilitating matching between research demand and supply and encouraging the establishment and development of innovative enterprises.

In order to reach these objectives, the bill provides for the development of an integrated set of interventions, many of which will be supplemented and supported through the ROP ERDF Latium 2007-2013. In particular, the interventions will relate to:

- supporting industrial research and pre-competitive development projects implemented by enterprises and their clusters;
- providing access for SMEs to specialist services relating to research and innovation;
- facilitating the transfer of knowledge and skills by universities and research centres to businesses for the purposes of research, innovation and technology transfer activities;
- fostering interaction between public and private actors operating in the research system and the enhancement of their skills, including by means of the creation of a regional network of centres for research and technological innovation;
- facilitating the transfer of scientific and technological skills from the research system to the business sphere via the funding of joint research programmes;
- supporting initiatives aimed at increasing openness and international cooperation in the field of research, innovation and technology transfer;
- supporting investment in innovative processes, products and services in SMEs, including by promoting the establishment of business networks;
- supporting technology transfer activities in favour of SMEs, including through the use of specialised innovation intermediaries; and
- encouraging the establishment and development of new innovative businesses, particularly in the knowledge economy and advanced technology sectors.

For 2007-2013, €280 million (€40 million per year) has been allocated to the “Fund for economic development, innovation and research”, financed through ERDF (2007-2013) and FAS¹³ funds. This Fund aims to improve competitiveness by, among other things, encouraging innovation and technological development.

In particular, the Fund aims to increase the competitiveness of the regional production system by promoting innovation, growth and the optimisation of experience gained by regional technology districts and production centres of excellence characterised by innovative content and high export potential. In addition, innovation and technology transfer will be pursued by reinforcing and networking regional R&D skills.

In light of the above, the activities to be implemented are geared towards:

- increasing and enhancing investment in R&D;
- promoting an inclusive information society;
- fostering innovation and technology transfer;
- honing the competitive edge of the regional production base;
- encouraging innovative enterprises; and
- facilitating the internationalisation of the regional production system.

¹³ FAS: the Italian national Fund for Under-utilised Areas, which provides resources for what were previously known as “depressed areas” under Law no. 208 of 30 June 1998.

In the region of Latium, FILAS (Latium's financing agency for development) is the organisation responsible for supporting development and innovation processes in the region's entrepreneurial system.

To this end, FILAS proposes initiatives but, above all, administers innovation policies and the implementation of the relevant regional instruments (including EU funds).

As well as preparing the Innovation Scoreboard for the Latium region (which monitors the performance of the region including in comparison with other Italian regions), along the lines of the Innovation Scoreboard produced by the European Commission, FILAS acted as the reference organisation for the 6th Framework Programme. In this regard, it must also be added that via the "Opera Lazio" instrument (devised by FILAS in 2004-2005), it funded the participation of SMEs, universities and research centres in the 6th Framework Programme, through grants in the form of lump-sum reimbursements for expenses incurred and paid during the preparation stage of European project proposals.

FILAS was also responsible for the management of a large part of the SPD (Single Programming Document) measures relating to the priority axis "Innovation and the knowledge economy"¹⁴.

Even in this regard, emphasis was placed on funding instruments for innovation (Measure IV.2) through the establishment of:

(a) a *Pre-investment Fund*, which after a difficult start-up period, owing to the innovative nature of the instrument, seems to be heading towards better results in the final stages of the SPD (74 projects approved);

(b) an *Innovation Fund*, for incentives that may relate to applied pre-competitive research, the transfer of knowledge and scientific innovations, and the acquisition of patents and technology packages to resolve production process methodology issues (144 projects); and

(c) a *Venture Capital Fund*, which supports both the start-up of new enterprises (start-up financing) and the development of SMES (expansion capital) in order to implement hi-tech and innovative activities or set up substantial process and/or product/service technological upgrade and improvement projects (34 projects).

In addition, through the SPD, FILAS has established data transmission networks within research centres, industrial areas and technology parks, with the aim of involving a wider range of actors in the knowledge and technology production and transfer process. In particular, the actions carried out included the establishment of:

(i) a *Business Lab*: a regional mechanism created to facilitate the start-up of businesses on the basis of innovative ideas generated within universities, research centres and enterprises (102 projects were evaluated of which 50 were approved and in relation to which 140 scholarships were granted. From the 36 projects concluded, 16 new enterprises were created);

(ii) the "*Osservatorio FILAS*" (<http://www.osservatoriofilas.it/>), a monitoring centre which conducts studies and research aimed at analysing the innovation dynamics of Latium SMEs (such as the Six-monthly Survey of SME Innovation; the Regional Framework for Innovation Evaluation; and Economic Indicators). It constitutes the systematic monitoring vehicle of the most significant innovation factors, the extent of innovation dissemination and its territorial potential; and

(iii) the *Market Place* (www.elazio.it) initiative, aimed at encouraging computer literacy and the access of Latium SMEs to interactive multimedia communication and e-commerce, as well as boosting the business expansion and internationalisation capacity of SMEs. Over 10,000 businesses are registered,

¹⁴ The resources dedicated to this measure (II.5) by the Single Programming Document 2000-2006 amounted to €16,135,145.

recording a daily increase in the use of the internet and PCs. 92% of elazio SMEs connect to the internet at least once a day, constituting a constant and direct relationship with a growing number of businesses within the territory (on average, 500 SMEs per day).

Finally, again within the ambit of the SPD 2000-2006, interventions were financed for the purposes of promoting innovation via the formulation of an “Action Plan for innovation and the networking of activities of regional research organisations and universities” (Sub-measure II.5.1) and (under Sub-measure II.5.2) the promotion of research and technology transfer in centres of excellence (the Castel Romano Technology Park, the Biomedical Campus of Rome, the Tiburtino Technology Park, the Upper Latium Science Park and the Southern Latium Science and Technology Park (Pa.L.Mer.)). The aim in this case was to integrate the regional centres of excellence with the entrepreneurial system and, in particular, to bring SMEs operating in certain specific sectors closer to the research activities of these centres. To that end, integrated research-business cooperation methods were trialled for the development of innovation proposals through:

- an initiative to consolidate the helpdesk counters (PdIAs) previously established under the SPD 1994-1999 and to establish new counters, namely “IT helpdesks” created within industry associations and chambers of commerce and managed by an employee selected from the organisation hosting the counter, whose task is to respond to questions from businesses regarding technological needs; and
- the engagement of specific professionals known as “tecnofori”¹⁵ (a neologism for technology bearers). The latter are called on to determine the technology needs of SMEs, seek solutions for this demand and encourage meetings and agreements between businesses and previously-identified technology providers. In addition, their acquired technological skills are shared with other enterprises within the sector and/or territory.

Within the framework of the SPD, both in the case of the PdIAs and Tecnofori, support for technology transfer consisted of making a free help service available to businesses, without providing direct funding – which was, however, provided via regional resources. This is the case, for instance, with the PITT (Intellectual Property and Technological Transfer) measure of the Centro Atena, managed by FILAS, provides real services (limited to businesses operating in the aerospace, multimedia and ICT sectors) comprising legal and financial advice for the exploitation/acquisition of transferable technology and the co-financing of costs directly attributable to the relevant project.

In addition to these initiatives aimed at assisting explicit and latent technology demands to be matched by available supply, FILAS has created other projects, ex. awarding public recognition (via the “INNOVALAZIO” label) and a monetary prize (€100,000, as *de minimis* aid) to the most innovative Latium SMEs in terms of products, processes and organisational models¹⁶; or the “I=RP”¹⁷. The latter was a project which stand out among FILAS’s own initiatives. It was jointly sponsored by the Municipality of Rome, and the Chamber of Commerce of Rome, to support small to medium-sized enterprises in Rome. Through this project, it was sought to promote the implementation of innovative projects in businesses operating in certain sectors (namely, communications technology, aerospace technology, advanced services for cultural heritage, tourism and audiovisual, and urban and environmental quality) through the assistance of a researcher, who, pursuant to an “innovation contract”, would oversee the development of the projects working within the particular business for a period varying between minimum of 12 months and a maximum of 18 months.

¹⁵In total, 8 Tecnofori were engaged, 1,210 businesses were contacted, 60 technology requests were identified and 25 technological solutions were provided to SMEs with 12 technology transfer sites set up and financed under other Measures/regional laws.

¹⁶ In total, 500 businesses were involved and 6 prizes and 47 labels were awarded

¹⁷ For further information see: <http://www.romaeconomia.it>

The document entitled “*Politica di sviluppo unitaria 2007-2013*” (or “Uniform Development Policy 2007-2013”), prepared by the Regional Directorate for Economic Programming, identifies the aerospace (the regional aerospace sector is the most important in the country with around 30,000 employees, 200 businesses and an annual turnover of over 5 billion euro) chemical and pharmaceutical, bioscience and biotechnology, maritime economic, energy, ICT-audiovisual, and the tourism and cultural services economic sectors, as those within which the region intends (as part of the new Structural Funds programming) to foster industrial research and the transfer of that research to the entrepreneurial system.

In the ROP “Competitiveness” 2007-2013¹⁸, approved by the Latium region in October 2007, the experiences launched under the SPD 2000-2006 will continue to be pursued, with support being given to technology transfer for the purposes of encouraging dialogue between the entrepreneurial world and the research sphere through:

- support for the introduction of “intermediaries” capable of proposing appealing innovations for businesses and communicating with the business sphere; and
- support for the start-up of businesses capable of ensuring significant product innovations for the market, at local, national and international level.

Similarly, emphasis will also be placed on providing direct assistance to businesses both through incentives specifically aimed at facilitating RTD activities and at introducing innovations, as well as by bringing in professionals capable of simplifying dialogue with the research sphere.

3. The actors in the regional administration

Within the region of Latium, the authority in charge of the region’s innovation policies is the Directorate for Economic Development, Research, Innovation and Tourism. The latter constitutes the regional institutional point of reference for FILAS and the other regional actors with responsibilities in this field. In particular, one of these actors is Agenzia Sviluppo Lazio (the “Latium Development Agency”) which, among other things, has prepared a monitoring report on the implementation of the Lisbon Strategy in the region of Latium.

On the contrary, the Directorate for Productive Activities is responsible for matters pertaining to internationalisation. It is interesting to note that for these purposes, the Directorate for Productive Activities relies on the support of the Latium Development Agency. The latter can be considered a fully-fledged operational arm of the region in the area of internationalisation. Indeed, the Latium Development Agency administered the SPD measures relating to internationalisation¹⁹. The ROP 2007-2013 provides further support for internationalisation (4.1.2 Activities). Once again, it is interesting to note that in the new ROP, internationalisation is a measure within the priority axis linked to innovation.

In addition to FILAS and the Latium Development Agency, innovation comes within the operations of two other regional bodies:

- the Business Innovation Centre Latium (BIC LAZIO), which oversees business start-ups and growth. It has recently opened the latest of its 12 branches at “La Sapienza” University. BIC Lazio manages four incubators and is particularly active in planning activities for technology transfer interventions within the region. Among the various initiatives, the portal Lazio-Europa²⁰

¹⁸ In the ROP 2007-2013, €254 million, i.e. 33.7% of a total of € 753.5 million, has been allocated to the first priority axis “Competitiveness, innovation and strengthening of the production base”.

¹⁹ The resources dedicated to this measure (II.3) by the Single Programming Document 2000-2006 were €15,093,494.

²⁰ <http://www.lazioeuropa.it/home.asp>

- is geared towards raising the awareness of the main regional actors in relation to technology transfer issues and innovation policies existing at the European and regional level; and
- the Regional Agency for Development and Innovation in Latium (ARSIAL) – established in 1995 with the aim of supporting the competitiveness and innovation of Latium enterprises operating in the agricultural sector. Of particular interest is the role played by the Agency in the area of experimentation with and the fostering of process innovations. The Agency also fulfils the traditional role of a funding agency, providing grants and start-up capital, as well as funding professional training and overseeing “experimental” businesses in sectors such as those relating to organic farming, clean energy and environmental remediation.

4. The actors in the regional and local area systems

One of the main strengths of the Latium region in relation to innovation is the available supply of R & D services. In particular, some of the main actors are as follows:

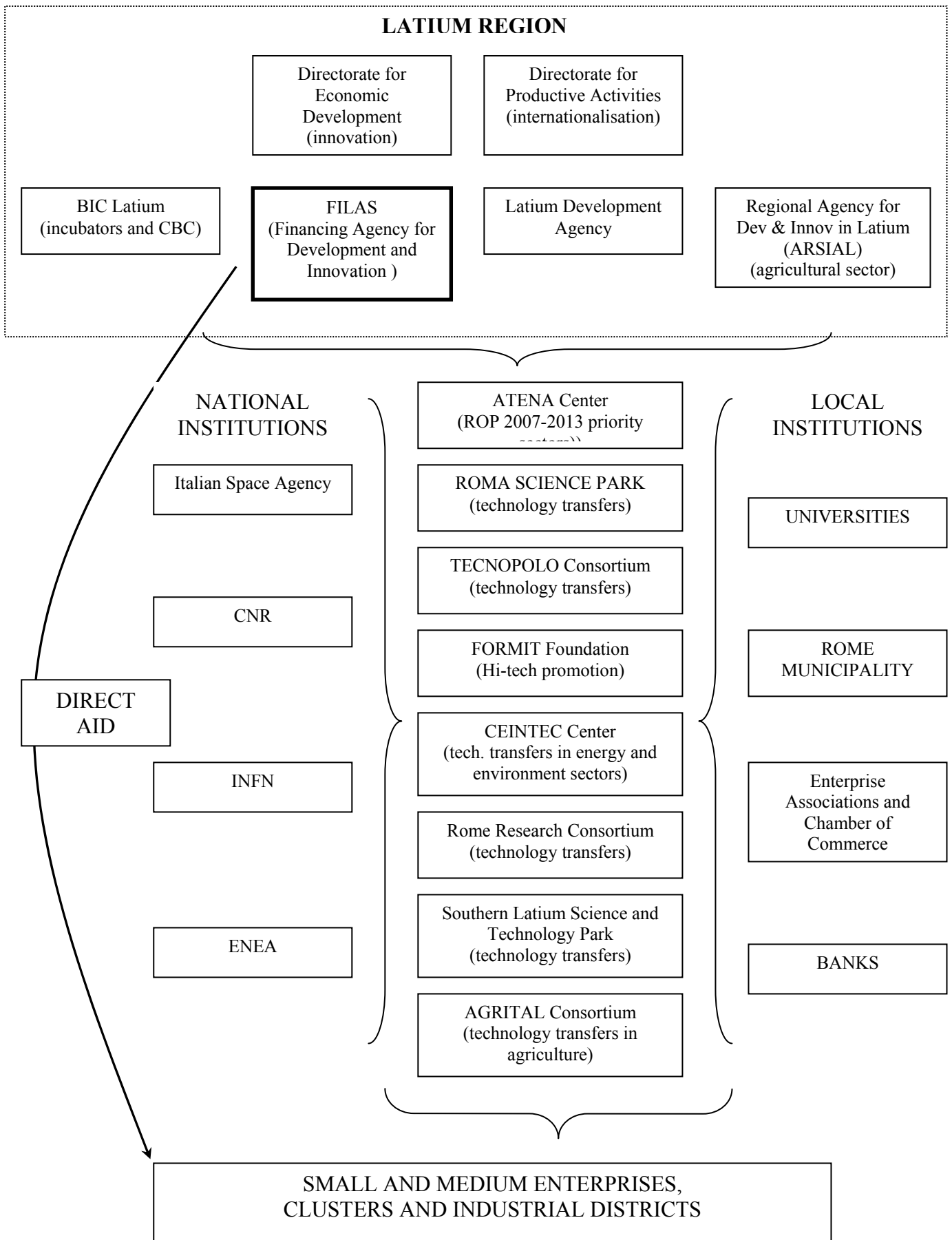
- CENTRO ATENA: a centre of excellence established by the Latium region dedicated to interactive multimedia communications and aerospace, but recently enlarged to the other priority sectors of ROP 2007-2013. The Centro Atena provides support services for pre-competitive investments and conducts analyses and studies of the sector and of enabling technologies. In particular, the centre targets: the generation and evaluation of technology and market scenarios; research and development into new technology solutions and transfer; demonstration of innovative technologies; further education and distance learning; promotion of the territory; promotion of a science culture and the establishment and growth of businesses;
- ENEA: After the institutional restructuring of 1999, ENEA began to carry out the role, alongside its traditional responsibilities of research and technology transfer, of an agency for the production system and public administrations through “the provision of advanced services for businesses”. In performing these functions, ENEA participates in and manages agreements at the national and European level, with potential benefits for the local partners of consortia in which it participates (including the Rome Industrial Technology Park, the Latium Technology Innovation Centre (CEINTEC), the Rome Research Consortium, the Ulysses Consortium, the AGRITAL Research Consortium, the DINTEC Consortium Company, the ISNOVA Consortium Company, and the AGITEC Advanced Services Agency).
- the CNR: which has two Research Areas in Rome and the highest number of centres with arrangements in place with universities. In Latium, there are 25 research institutes which in 2001 spent around 793 million euro, mainly in-house. In 1996, a Research Area was established at Tor Vergata via an agreement with the Tor Vergata University, within the framework of which various research institutes and laboratories were set up;
- “ROMA SCIENZA” Science Park: the “Science Park” project, founded in 1994 as part of the city’s innovation support system, got underway in 1998 with the launch of the PASTEUR Project (European Science and Technology Park of the Universities of Rome) and the LICOS project (Employment and Innovation in Scientific Communications). To date – standing by its dual mission as a centre for technology transfer to businesses (and coordination between public and private local institutions dedicated to employment growth and technological innovation) and as a centre for the promotion and dissemination of science culture – it administers services for the enhancement of public research results, for the establishment of innovative entrepreneurial initiatives and for the territorial integration of universities based on institutional cooperation and on the improvement of technological skills in Rome. The Science Park is situated in the University of Tor Vergata’s Research Area, which extends over an area of 600 hectares, constituting a dynamic university campus and a CNR research centre with 21 institutes, 35,000 students, 1,243 teaching staff, 6 faculties, 378 laboratories, 19 research labs and 115 classrooms;
- TECNOPOLO: With the aim of creating an organisation to boost and spread innovation within the local system, the region of Latium, the Municipality of Rome and other local institutions

- and associations sponsored the establishment in 1999 of the Castel Romano Technology Park (or “Tecnopolo”). The TECNOPOLO Consortium draws on expertise, laboratories, facilities and knowledge networks provided by its members and its own small operational unit, supplemented by an initial group of young graduates yet to specialise. The objectives of the Technology Park are:
- to establish a series of services and initiatives for the promotion and dissemination of innovation to SMEs;
 - to experiment with intervention and technology solutions, acting as an innovation catalyst for the competitiveness and development of the territory and SMEs in particular; and
 - to liaise operationally (network) with other centres of excellence and leading enterprises, to enable the territory to connect and come into contact with the best national and international organisations and opportunities.
- The FORMIT Foundation, established in July 1985, constitutes a hub for the promotion of hi-tech activities and the transfer of the most significant experiences in advanced technology areas, carrying out scientific research, technical support, and industrial, financial and socio-economic analysis and evaluation activities;
 - the Latium Technology Innovation Centre (CEINTEC): the main tasks of CEINTEC (a public-private joint-venture company) is to foster and stimulate the technological modernisation of small to medium-sized industrial and craft enterprises operating in the region of Latium and to facilitate the adoption in these businesses of more up-to-date production and management techniques - in light also of the need to reduce energy consumption and to minimise the environmental impact of production activities;
 - the INFN: Since 1999, the INFN has operated a technology transfer service which, among other things, conducts staff training and upskilling activities for SMEs. The national headquarters for the INFN’s National Coordinating Unit for technology transfer is in Rome. The sub-committee, which has responsibility for Latium, has for years established cooperation projects with large and small enterprises for training of technical staff and for technology transfer activities;
 - the Italian Space Agency (ASI) plays a particularly important role in stimulating demand in the aerospace sector. In 2000, 22.5% of Italian businesses in the space sector operated out of Latium, for the most part on commissions from ASI or on associated projects. ASI does not have its own laboratories and mainly acts as an agency;
 - the University System: the university system in Latium is composed of five large public universities (La Sapienza, Tor Vergata, Roma Tre, Cassino and the University of Tuscia) and one private university (LUISS). The university system is making a name for itself as paying close attention to liaising with its territory. La Sapienza, Tor Vergata and Roma 3, in particular, have distinguished themselves through their participation in various consortia and forums whose objective was to adapt training and research courses to business and local economic needs. Some of these partnerships involved the participation of representatives of the region, industry associations and large firms. La Sapienza and Tor Vergata also have a dedicated office for technology transfer and for the management of patent rights;
 - the Rome Research Consortium (CRR) established in 1986, is a public-private non-profit organisation aimed at promoting and developing innovation and technology transfer for industry (especially SMEs) in central Italy. To this end, it cooperates with universities, research centres, hi-tech businesses and SMEs in Italy and/or Europe;
 - the Southern Latium Science and Technology Park (Pa.L.Mer.) is a limited liability consortium company which brings together and draws on a wealth of knowledge, experience and skills from significant public and private organisations. The company aims to regulate, coordinate and develop activities geared to proposing, implementing and managing research programmes, and experimentation, testing and dissemination in the fields of scientific, technological and organisational innovation. The company promotes and manages a science and technology park conceived as a territorial innovation system and as an intelligence hub of a technical and economic network aimed at facilitating the mobility of technological resources within local area networks, and to provide incentives for the development of new entrepreneurial activities and encourage the

spread of new skills and technology in local businesses. The fostering of a culture of technology transfer and integration between universities, research organisations and industry as a way of developing the socio-economic system is one of Pa.L.Mer.'s objectives;

- the AGRITAL Research Consortium – Maccarese is an interesting experimental, consultancy and technology transfer organisation fostering competitiveness in the agricultural food industry, which has formed partnerships with local and public research organisations, universities, banks and several private enterprises.

LATIUM REGIONAL INNOVATION SYSTEM DIAGRAM



5. Relations with central government

The Latium region is also able to rely on national resources allocated to the regions by means of Framework Programme Agreements (Accordi di programma quadro).

For instance the Framework Programme Agreement (2005) for a Technology District in the aerospace industry sector, signed by the region of Latium, the Ministry of Economy and Finance and MIUR. The agreement, the product of consultation with social and economic partners, was concluded with the assistance of FILAS, which provided a forum for discussion with representatives from the business sphere. The Agreement immediately made 40 million euro available within the region, with an additional 20 million euro from MIUR, for the purpose of establishing a technology district for the aerospace sector. The agreement concerned: industrial research for large firms and for small to medium-sized enterprises, further education, professional training, the creation and management of significant technical and scientific infrastructure and the attraction of public and private capital.

In November 2007, a framework programme agreement was signed with the MUR (formerly MIUR) and the MIBAC (the Ministry for Cultural Heritage and Activities) for the establishment of a second technology district (known as the DTC) in Latium in the sector of new technologies as applied to cultural heritage and activities. The strategy on which the DTC is based is that of increasing and strengthening competitiveness and the capacity for innovation, research, technology transfer and boosting and differentiating cultural products and services within the region, taking advantage of the region's existing highly-developed industrial, technical and scientific sectors.

The DTC also aims to promote collaborative efforts to link and coordinate resources and entrepreneurial, professional and technical and scientific organisations within the region.

The DTC endeavours to map out a coherent intervention taking in the entire cultural heritage process, which due its peculiar nature requires coordinated and collaborative measures at the European, central and regional levels, with the public and private sectors complementing each other.

The planned initiatives are aimed at:

- associating an initial core group of more innovation-oriented enterprises with specific application projects;
- progressively raising business awareness of new service solutions and platforms for the optimising cultural heritage and fostering a sense of belonging to a district;
- encouraging development in innovative solution-oriented demand;
- facilitating technology-sharing for the progressive spread of innovative know-how to a greater number of enterprises;
- facilitating the emergence of new career paths; and
- putting in place the basic tools necessary for increasing the competitiveness and critical mass of businesses in a district.

6. What is the relationship between innovation and internationalisation?

To date, the link between innovation and internationalisation has not been explicitly acknowledged in actions implemented under regional instruments.

Nevertheless, some of the activities implemented by the Latium Development Agency have linked internationalisation and innovation. This is the case, for example, with the Protocol Agreement signed between the Latium Development Agency and MATIMOP (the Israeli Industry Centre for Research and Development). Within this framework, a fund (with €1 million in co-financing provided by the

Latium region) has been created to facilitate the formulation of a programme of activities and the monitoring of the effective functioning of the protocol, as well as the development of joint projects on technological innovation between SMEs from the Latium region and from Israel in the following sectors: biotechnology, aerospace, environment and micro- and nanotechnology. Each of the SMEs involved will be responsible for developing one part of the project although the project results will be shared by all participants.

Another recent project in the biotechnology sector, called “Pharma-Finance”, is of particular interest. The project was developed by the Latium Development Agency with the participation, at different levels, of other regional actors such as the three public universities (La Sapienza, Roma Tre and Tor Vergata) and ENEA. The objective was to promote the matching of innovation supply (ideas) and enterprise demand. To this end, a forum was organised which brought together enterprises, universities and a research centre (ENEA). The involvement of a US partner (the Zangani Investor Community) facilitated the participation of US enterprises and the US consultancy firm CCT, which specialises in financial investment in innovative technology and patents.

Given the positive results that flowed from the “Pharma-Finance” forum, the Latium Development Agency intends to promote the organisation of, or participation in, further similar events. As a first step, as part of its activities aimed at promoting the internationalisation of Latium SMEs, the Agency has organised a mission to Canada to participate in “BioContact”, one of the main annual events in the biomedical and pharma-biotechnology sectors.

The ROP 2007-2013 represents a step forward in this regard. Indeed, in analysing the performance of the regional innovation system, the ROP 2007-2013 makes explicit mention of the fact that the weaknesses of the regional innovation system contribute to the loss of competitiveness of Latium businesses in international markets, as demonstrated by the fall in value of high or growing-productivity regional exports over total exports, which went down in five years from 73.7% in 2000 to 62.0% in 2005. Among the weaknesses identified, the one with the greatest impact is persistently low levels of matching (technology transfer) – in an international scenario where competition is based on the hi-tech content of goods and services – which could in the medium to long-term lead to the further marginalisation of regional products.

Furthermore, the ROP priority axis entitled “Research innovation and strengthening of the production base”²¹ acknowledges the direct link between the promotion of research, innovation and technology transfer and reinforcement of the competitiveness of the regional production system, including by way of providing support for internationalisation.

7. What is the role of the Mediterranean in innovation and internationalisation policies?

As has been stated on various occasions by the Region’s President, Mr Marrazzo, the Mediterranean is at the centre of the political and economic interests of the region of Latium.

Nevertheless, there has been no mention of the area in question as a strategic area in the development of innovation within the region. In reality, however, three Mediterranean countries (Tunisia, Morocco and Egypt) represent a strategic area in the internationalisation strategy, as acknowledged, *inter alia*, in the “Guidelines for the internationalisation activities of Latium SMEs” (2006).

Although the Mediterranean represents a priority of the internationalisation strategy of the Latium region, these countries have not been interested by those interventions, which has, instead, privileged the more industrialised countries: such as USA, Canada and Israel.

²¹ The other two priority axes of the ROP are: “the environment and risk prevention” and “accessibility”.