



MADRID INNOVATION AND RESEARCH SYSTEM

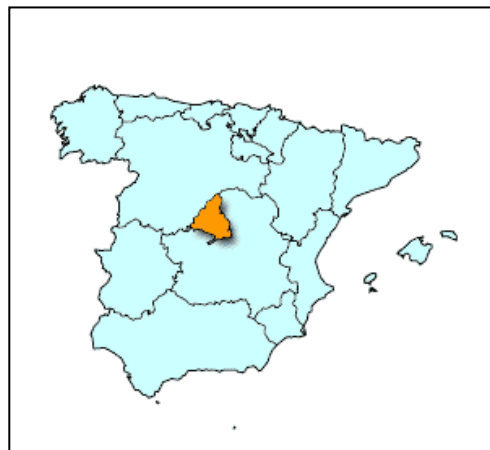
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A. General context

1. Location and Area

The Madrid Region is located at the geographic centre of the Iberian Peninsula (its most northern point being 41° 10' and most southern point 39° 53') and it covers a surface area of 8,026 km². It is an inland region and represents 1.7% of the total national territory. The region is located on a high central plateau and its north-western part is very mountainous (maximum elevation reaches 2,430 m. and minimum elevation is 430 m.).

National (km ²)	505 987
Regional (km ²)	8 026

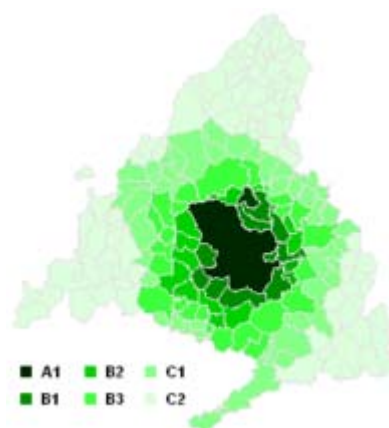


2. Transports – Roads, rail lines, air accessibility

The great urban nuclei of the suburbs of the capital have developed surrounded by the six main free radial highways linking central Madrid and all the Spain's coastal regions. Due to the significant problems of traffic in these routes, recently four radial toll highways have been built. When leaving the community and crossing the mountain range of Guadarrama (with the most crowded tunnel of Spain), one of the original six radial roads articulating Spain last century (A-6), has been transformed into toll highway.

Four free highways exist for circumvallation of central city: municipal M-30, State-owned M-40 and M-50 and the regional M-45. Other significant highways are those going to Colmenar, to Toledo and the highways to access the Barajas airport.

There were 532 kilometers of highways in 2001 in the region - representing an increase of more than 25% compared to 1990 - and 2 710 kilometers of other roads. The region has an ample network of highways, being all of gratuitous use with the exception of the radial alternatives of toll. Still in 2001, 3.5 million cars were registered in the Madrid region, of which 2.9 million private cars.



Map of urban transport areas / densities

The Madrid Region is the centre of the Spanish railway network. The region is connected to the main cities across the Peninsula and Europe, in many cases by high speed train (Barcelona, Malaga, Seville, Zaragoza, Valladolid and Toledo). In the Community of Madrid there are eleven railway lines to serve the whole of the metropolitan area, with a radial plan. A railroad line reaches the slopes of the Sierra de Guadarrama and crosses the mountain range. Rail network measured 601.8 kilometers in 2001, a slight decrease compared to the 644 kilometers available in 1996. 82% of this network is electrified. The underground network is 322 km in length and is used by 650 million passengers a year. It is the third largest network in Europe and the fourth in the world. It has 12. lines and 318 stations. The network is currently being extended and provides public transport service to 90% of the regional population.

The Madrid Region has an international airport, Barajas, which is the main airport of the Iberian Peninsula and is the fourth largest in Europe in terms of number of passengers (45.5 million in 2006). The new Terminal 4, which opened in February 2006, will allow for an increase up to 70 million passengers a year. Barajas is an important link between Latin America, Europe and North Africa (30% of all flights between Europe and South America, and 41% between Central America, fly via Madrid). Its location, at just 12 kilometres from the city centre and the connections by underground and bus, provide travellers with fast, economical and easy access. Other airports of smaller importance in the region are those of Cuatro Vientos, Getafe and Torrejón.

The geographical location of the Madrid Region, in the centre of the Iberian Peninsula, and the radial transport system ensure efficient transportation and communication with the rest of the country. The largest logistics space in Spain (24.5 million m²) is found within the Madrid Region with inter-modal facilities, infrastructures and services. There are more than 15 specialised transport platforms including the Transport Centre, the Dry Port of Coslada, the Air Cargo Centre of Barajas, Mercamadrid, the Madrid Transport Centre, the railway stations of Vicálvaro, Abroñigal and Villaverde, Neissa Sur, CADSI, the Carpetania Industrial Logistics Centre, the Prologis Alcalá Park and the San Agustín de Guadalix Logistics Zone, among many others. The Dry Port of Coslada, located near Barajas International Airport, has a surface area of 120,000 m² (which will soon reach 140,000 m²) and connects the Madrid Region by train with the four major ports of Spain: Algeciras, Barcelona, Bilbao and Valencia. More than 27,000 containers pass through the Dry Port of Coslada every year and it is the first inland maritime customs site of Europe in terms of volume. Among future projects, we highlight the Móstoles Atlantic Gateway Logistics Centre, as well as a new Dry Port in Villarejo de Salvanés,

3. Demography

The Madrid Region has 6,2 million inhabitants (2007). The population of the region has grown considerably and has very diverse origins (more than 1 million of the inhabitants, almost 16% of the total, are foreigners).

	<u>2002</u>	<u>2004</u>	<u>2007</u>	<u>Trend</u>
National (millions)	40, 964	42, 345	45,283	Increasing
Regional (millions)	5,426	5,705	6,189	Increasing

The life expectancy of the Madrid Region citizens is one of the highest in the world: 84.9 years for women and for men it is 78.3 years. The Madrid Region is one of the most densely populated regions of Europe with a ratio of 743 inhabitants per km². Of the 179 municipalities located in the Madrid Region, the most populated is the capital city of Madrid, with more than 3 million inhabitants, which is also the most populated city in Spain.

Main towns

Due to the specific geographic features of the Region the great majority of the population is concentrated in the capital and surrounding metropolitan area. Towns larger than 100,000 inhabitants are:

<u>Municipality</u>	<u>Total population</u>	<u>Foreign population</u>	<u>%</u>
Madrid (City)	3 233,869	550,804	17.03%
Móstoles	208,519	25,059	12.02%
Alcalá de Henares	201,703	36,357	18.03%
Fuenlabrada	200,279	25,955	12.92%
Leganés	187,162	21,279	11.29%
Alcorcón	175,624	22,697	12.92%
Getafe	166,040	23,948	14.42%
Torrejón de Ardoz	114,228	21,452	18.78%
Alcobendas	109,601	17,518	15.98%

Source: Regional Ministry for Immigration (January 2007)

4. GDP

The Madrid Region has a dynamic economy that is in constant growth, and which in 2006 represented more than 17.7% of Spain's GDP. Madrid's economy is particularly focused on the services sector, which generates more than 78% of the regional GDP. It is also one of the European regions with the highest employment creation ratio (a 4.5 % increase in 2006) and the highest economic growth (4.6% in 2006).

	<u>2003</u>	<u>2005</u>	<u>2006</u>	<u>Trend</u>
National per capita (euro)	17 650	20 933	22 260	Increasing
Regional per capita (euro)	23 541	27220	28727	Increasing

National global (Millions euro)	782 929	908 450	980.954	Increasing
Regional global (Millions euro)	138 612	159.939	171.988	Increasing

5. Employment (Global figures and main sectors)

The Madrid Region has an excellent human capital situation. The active population is 3,241,500 people (4th quarter 2006) and the activity rate is 64.38%.

Global figures

	<u>2002</u>	<u>2005</u>	<u>Trend</u>
National (% of employment)	86,1%	90,8%	Increasing
Regional (% of employment)	88,4%	93,6%	Increasing

Sectorial perspective – Main industrial sectors

Some high-tech sectors are increasing the regional GDP: Telecommunications, Electronics, Pharmaceuticals, Defence, and Aeronautics. In recent years certain manufacturing industries in the southern industrial belt of the capital have suffered badly, enabling companies involved in high-tech processes in the north and north-east to prosper considerably. At present, basic industry is overshadowed by the manufacturing industry, there being a high technological level which has been facilitated by the presence of many R&D centres. At the same time, it is noticeable that industry is increasingly specialized in high-demand sectors (aircraft, electronics, pharmaceuticals, precision instruments and electrical engineering) or medium-demand (paper, transport and mechanical engineering).

The Madrid Region also has a network of technology clusters that promote those sectors that are economically strategic to the region: Aerospace and Aeronautics, Audiovisuals, Automotive, Biotechnology, Security, Finance, Logistics and Health.

B. RESEARCH & INNOVATION

1. Main Research sectors (employment, added value, trend)

Main parameters showing the size and features of the Madrid research and innovation system are:

<u>2003</u>	<u>Madrid</u>	<u>Spain</u>
Total researchers / thousand employees	7.87	4.38
Total researchers	23 216	103 617
Public Universities	7	68

2006 Regional expenditure in R&D on GDP in Comunidad de Madrid has been the highest among Spanish regions: 1,98% .

In 2005, 30.5% of all Spanish company expenditure on Research, Development and Innovation (RDI) was in the Madrid Region. The three main research sectors, in which 100 consortia and 4000 researchers are working with companies in Madrid are Experimental and Technological Sciences, Biology, biomedicine, and Social science. Research papers from the Madrid Region published in international journals make up 28.38% of all Spanish papers, positioning the Madrid Region as the national leader. In 2005, 18.4% of all Spanish patent awards were registered in Madrid.

2. Businesses, R&D and Innovation

2. 30% of all Spanish professionals dedicated to RDI activities are located in Madrid. 60% of all Spanish professionals dedicated to new technologies are also based in Madrid.

Private R&D Investment

The innovation activity in the firms of the CM is more intense than in the Spanish average, paying special attention in that sense to the construction and service sectors, recently included in the technological innovation survey of the INE (National Statistic Institute). Nonetheless, the obtained results according to the criterion of this poll of the INE, do not differ significantly from national average.

The expenditure of the innovation activities carried out in the CM by the industrial sector was about the 17% of the total national, while its contribution of the Gross Domestic Product (GDP) is a 13%.

Regional Innovation Scoreboard

Community of Madrid ranks 91 in the 2006 Regional Innovation Scoreboard (RIS), with a score of 0.61 in Regional Innovation Performance (RRSII).

Due to changes in the methodology of calculating the RRSII, one needs to be careful comparing the results between the 2002, 2003 and 2006 RIS. The Comunidad de Madrid case is highlighted in the 2006 RIS report: Comunidad de Madrid shows a drop from the 9th place in 2002, to the 13th in 2003 and 31st in 2006. For Comunidad De Madrid it is primarily the change in the weight of the national component which has the biggest impact on the rank of the region. Decreasing this weight from 50% to 25% will lead to a drop of about 19 places in 2006.

3. Main R&DI inputs and outputs

Researchers

2004

2006

Trend

National (FTE)	100.994	115.798	Increasing
Regional (FTE)	23.661	28.100	Increasing

R&D Investment - Regional level

	<u>2002</u>	<u>2004</u>	<u>2006</u>	<u>Trend</u>
Total expenditures (k euro)	2.277.822	2.447.465	3.415.991	Increasing
Public expenditures (k euro)	n.a	1060.591	1 332.771	Increasing
Private Expenditures (k euro)	n.a.	1.386.874	2.083.220	Increasing

C. RDI –main stakeholders

1. R&D Organisations

There are two main kinds of organisations directly performing R&D activities in Spain: higher education establishments and public research institutions. Technology centres in the region are rather scarce.

- **Higher Education organisations**

There are 15 universities in Madrid region and more than 20 public research institutions depending on the State Administration. Out of the 121 total research institutes of CSIC (Consejo Superior de Investigaciones Científicas) 48 are placed in Madrid.

Out of the 69 public universities in Spain, 6 of them are located in Madrid – 16% of total students - depending on the Regional budget (UNED has a National statute). Additionally 8 universities are private (2 of them linked to agreements with the Vatican). The total 15 Comunidad de Madrid universities are distributed in 20 campuses situated in the city of Madrid and 10 other municipalities. 86% of the university students in Madrid are registered in public universities and 14% in private ones.

The Madrid Private Universities are Universidad Alfonso X el Sabio, Universidad Antonio de Lebrija, Universidad Camilo José Cela, Universidad Europea de Madrid, Universidad Francisco de Vitoria, Universidad San Pablo-CEU, Universidad Pontificia Comillas and Universidad Pontificia de Salamanca. All the private universities but one (U.P. Comillas) are mainly focused in social sciences therefore having only a small research activity.

Public Universities	Students (1st & 2nd degrees) – academic year 2003-2004	Teaching and Research personnel 2004	Spanish Patent Applications (OEPM) 2001-2004	EPO Patent Applications 2001-2004	Spin offs created 2004-2007
Universidad Complutense de Madrid (UCM)	86 951	5 843	51	9	9
Universidad Politécnica de Madrid (UPM)	39 411	3 271	46	6	13
Universidad Autónoma de Madrid (UAM)	30 053	2 247	17	5	7
Universidad de Alcalá (UA)	19 040	1 650	18	0	7
Universidad Carlos III (UC3M)	16 359	1 597	15	0	10
Universidad Rey Juan Carlos (URJC)	14 400	1 113	3	1	6
Total regional	166 803	15 721	150	21	52
Universidad Nacional a Distancia (UNED) ¹	143 701	n.a.	6	1	4

Nearly all the EU university degrees are represented in the Madrid universities (as an example, UCM offers 75 different degrees) which constitute the strongest higher education agglomeration in Spain and one of the most important in Europe.

- **Public (National) research institutions**

Most of the national research institutions have their headquarters and main research facilities and labs located in the region of Madrid. They are linked to the National Ministries.

¹ UNED is a national university depending on the Ministry of Education (MEC), with central headquarters in Madrid

- The main Spanish research institution, Consejo Superior de Investigaciones Científicas (CSIC), has 49 research institutes based in Madrid out of a total of 133
- Instituto Español de Oceanografía (IEO)
- Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)
- Instituto Geominero (IGME)
- Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA)
- Instituto de Salud Carlos III (ISC3)
- Centro Nacional de Investigaciones Oncológicas (CNIO)
- Centro Nacional de Investigaciones Cardiovasculares (CNIC)
- Instituto Nacional de Técnica Aeroespacial (INTA)
- Centro de Estudios y Experimentación de Obras Públicas (CEDEX)

- **Public (Regional) research institutions**

Since 2006 Comunidad de Madrid is implementing the IMDEA; Regional advanced research institutes, in 9 different fields of science. They are developed in cooperation with the regional universities, being also involved in its development a large number of important companies based in the region. In some of the institute other public Administrations are also taking part in the endeavour.

- **Technology centres**

There are two kinds of technology centres in the region:

- Both those linked to the Comunidad de Madrid : IMIDRA-Instituto Madrileño de Investigación y Desarrollo Rural, in charge of agriculture and food research, or those directly supported, such as CIT-AGM Centro de Innovación Tecnológica para las Artes Gráficas, and CIDAM, currently under creation, participated by CM, CDTI (State Administration) and EADS
- nation-wide private technology centres based in Madrid : AITEMIN (mining), AITIM (wood products), IPE (paper), CESOL (welding) and ICEA (software). All of them but AITEMIN are of small dimension, meaning 0,5% of total private R&D expenditure in the region.

2. Public authorities – legal competencies

Regional development institutions emerged in Spain since the early '80s as central actors of the political scenery, taking care more and more of inter-sectoral issues and enlarging their field of competences to innovation, R&D and higher education along the following 20 years. That applies to the Comunidad de Madrid, created as a one-province Autonomous Community in 1983, being one of the Spain's 17 Autonomous Communities (Regions).

The approaches that the Madrid Regional Administration proposes in its policies and strategies are mainly limited by the share of competences between the Region and the State's General Administration established in the Spanish legal system, also conditioned by the European Union regulations and directives. The legal autonomy of the Universities and the potential role to be played by the local Administration (mainly large municipalities, such as the City of Madrid) are also elements to be considered in the development of research and innovation policies.

3. Intermediaries and support services

Science and Technology Parks based in the Comunidad de Madrid (use hyperlinks for further individual information):

Science / Technology Park	Main promoters	University liaison
<u>Parque Tecnológico de Madrid</u>	Comunidad de Madrid - IMADE	

<u>Parque Científico-Tecnológico de la UAH-Tecnoalcalá</u>	Comunidad de Madrid – IMADE Universidad de Alcalá Ayuntamiento de Alcalá de Henares	Universidad de Alcalá
<u>Parque Científico de la Universidad Carlos III – Legatec</u>	Comunidad de Madrid - IMADE Universidad Carlos III de Madrid Ayuntamiento de Leganés	Universidad Carlos III de Madrid
<u>Parque Científico-Tecnológico de la Universidad Rey Juan Carlos - Móstoles Tecnológico</u>	Comunidad de Madrid – IMADE Universidad Rey Juan Carlos Ayuntamiento de Móstoles	Universidad Rey Juan Carlos
<u>Parque Científico de Madrid</u>	Comunidad de Madrid – Consejerías de Educación y de Economía Universidad Complutense de Madrid Universidad Autónoma de Madrid	Universidad Complutense de Madrid Universidad Autónoma de Madrid
<u>Parque Tecnológico UPM : campus Vallecas / Montegancedo.</u>	Comunidad de Madrid - IMADE Universidad Politécnica de Madrid	Universidad Politécnica de Madrid
<u>Consorcio Urbanístico Área Tecnológica del Sur</u>	Comunidad de Madrid – IMADE Universidad Politécnica de Madrid Ayuntamiento de Getafe	Universidad Politécnica de Madrid

Other additional large infrastructures are currently planned: IMADE is promoting the City of Finance in Boadilla and the City of Knowledge in Colmenar Viejo while the Madrid municipality is developing the City of Madrid Technology Park in Villaverde.

Technology process / dissemination offices

The Comunidad de Madrid (Economy department – D.G. Innovation) has put in place since 2004 a programme of Centros de Difusión Tecnológica (CDT) – technology dissemination experts based in Chambers of Commerce and Business Association territorial offices, which role is supporting firms innovation through information about technology and public programmes (national, regional and European) participation.

Besides, IMADE has 12 regional offices based in different areas of the region.

Industry Liaison Offices

- Fundación Universidad-Empresa (FUE, member of the nation-wide REDFUE which addresses relationships university-industry and technology transfer)
- Oficinas de Transferencia de Resultados de la Investigación – OTRI, based in the research institutions and Universities, being a part of a national network (Red OTRI) formed by more than one hundred nodes. In total 32 OTRIS are based in Madrid out of the 216 OTRIS officially registered by the Ministry of Education for the total of Spain; they are hosted by the following types of organisations:

11 Universities, 12 Research institutes, 3 Technology centres, 5 Business Associations, 1 Administration

- The European **Innovation Relay Centres** (IRC) Network (currently transformed in European Enterprise network) has a node in Madrid addressing technology transfer support services. The node is lead by Fundación madrimasd, and formed by CSIC, Prque Científico de Madrid and 3 Business Associations (CEIM, AECIM, AEDHE).

D. RDI – Main current policy trends and challenges

	Current policy trends and challenges
Research policy – national level	Increase in research expenditure both by growing public budget and private resources. Increase in talent incorporation from both local and external origin. Changes in the structure and management procedures of the National R&D Plan (currently at work for NP 2008-2011)
Research policy – regional level	Strengthen the role of the Comunidad de Madrid policies in supporting research development attaining research critical mass in priority areas, through cooperation of research groups from different institutions and universities. Creation of new advanced research institutions opened to participation of private companies. Internationalisation of regional research activities.
Innovation policy – national level	Growing innovation in firms in order to provide a strong basis for economic competitiveness. Development of R&D&innovation plans in large-scale strategic sectors. Creation of new innovative companies
Innovation policy – regional level	Development of clusters activities and the strategic industries (aerospace, ICT, biotech). Increased relationship among public research centres / universities and industry. Creation of RDI infrastructures (technology parks, incubators, etc.) Support to SMEs innovation.

E. Regional policies

1. Competences on RDI issues

The competences of the Comunidad de Madrid are fixed the article 26.15 of the Regional Autonomy Statute on promotion of research. Out of that, at regional level, the Law 5/98 of Promotion of Scientific Research and Technological Innovation of the Community of Madrid (LEFICIT), approved by the Regional Parliament in 1998, has introduced the definition of a regional strategy beyond the duration of a legislative period. Its acceptance by all the agents of the regional innovation system has allowed the beginning of a policy adapted to the characteristics of Madrid. Additionally, the Organic Law of Universities (6/01) fixes the transfer of Universities functions and services from State Administration to the Community of Madrid.

2. Budget

Even when along the eighties some measures and regional resources have been allocated to regional research, it has been in the very early nineties when the Comunidad de Madrid applied a continuous and important support to science and technology organised around the different Regional Plans of Scientific Research and Technology Innovation (PRICIT), the first of which started 1990.

	<u>Period</u>	<u>Total Budget</u>
I Regional Research Programme	1990-1993	18,83 M €
II Regional Research Programme	1994-1997	53,45 M €
II Regional Research Programme (extension)	1998-1999	46,14 M €
III Regional Scientific Research and Technology Programme	2000-2003	111,9 M €
IV Regional Scientific Research and Technology Innovation	2004-2008	220 M €

Source: Comunidad de Madrid

3. Internal organisation

Institutional frame of Science Policy in the Comunidad de Madrid

According to LEFICYT, the institutional structure is formed by

- Inter-departmental Commission of Science and Technology

Its role is evaluation of needs and resources required for the regional Plan and programmes, rules of management of the regional resources, coordination of regional ministries on R&D, unification of proposals of participation in international programmes, as well as articulation of relationships with other institutions.

- Regional Council of Science and Technology (advisory body)

As a consultative body it has to report on the issues proposed by the Inter-departmental Commission and on development of regional actions, to analyse and propose new initiatives of interest for the C.M., to promote relations between research and industry and to coordinate the regional actions with the activities of the research institutions and community.

- D.G. Universities and Research, depending on the Consejería de Educación (Education regional ministry), acting as the executive body of the Regional Government

Organisation

The citizens of the Autonomous Community of Madrid are represented by 120 elected deputies, that sit in the Madrid Regional Parliament (regional legislature). The President of the Autonomous Community of Madrid is elected by the Parliament after the regional election, in which all the citizens registered in the Comunidad de Madrid vote every four years. The Regional Government is formed by the President, 2 Vice-presidents and 13 Consejeros (Regional Ministers).

There are regional responsibilities on research and innovation mainly in the following departments:

- Consejería de Educación – through the Direction General of Universities and Research (DGUI)

It holds the competences of research in the Comunidad de Madrid, planning (PRICIT is one of the main responsibilities of the DGUI), execution and monitoring of the regional policies, coordinating the activities of the different departments, promoting training of researchers, creation of new infrastructures and research centres, cooperation with the research institutions and universities, promotion of science-based industry innovation and coordination with all the Administrations (European, National and other) charged of scientific research..

- Consejería de Economía y Consumo – through the D. G. de Innovación

Develop industry innovation programmes and instruments addressed to firms cooperation from innovation towards an increased competitiveness. Development of the Information Society in the Region. Cooperate in the PRICIT preparation and integration in it of the technology innovation activities.

- Consejería de Sanidad – through the Agencia Laín Entralgo

The Agencia Laín Entralgo is linked to the department of Health, its competences cover Accreditation in Health Systems Quality, Training and Research. The research area activities are mainly addressed to support researchers training, develop research in specific fields (neuroscience, primary attention to patients) and to cooperate with health research institutions.

4. Agencies

Two main organisations have been created by the Comunidad de Madrid: Fundación madrimasd (linked to the Consejería de Educación) and IMADE (linked to the Consejería de Economía).

As already mentioned, a third agency, Agencia Laín Entralgo, is in charge of coordination of the research developed by the Regional Health System, mainly in the large health centers of the region.

FUNDACIÓN PARA EL CONOCIMIENTO MADRI+D

Created 2003, the Fundación para el Conocimiento madri+d (from hereon FCm+d) was established under the motion of the Government Council of the Community of Madrid (General Directorate of Universities and Research. DGUI) to manage and develop a number of programmes included in the Madrid R&D Regional Plan. A couple of Business Associations, CEIM and APD are minority shareholders in FCm+d. Its budget is variable according to the programmes to be run in a specific year.

Keeping in line with the Plan goals, FCm+d's general framework is aimed towards the following broad objectives:

- Promote scientific quality research
- Stimulate technology innovation and joint actions between the scientific and business communities
- Co-ordinate actions with universities and research institutions
- Develop a framework to encourage the creation of companies from research, development and demonstration projects
- Co-ordinate scientific research and technology development activities with regional, national and international organisations/institutions
- Maintain information and communication facilities to link scientific, industrial and technological communities
- Participate in European R&D programmes and projects

FCm+d is a member of the regional innovation network madri+d, which aims at promoting/facilitating academic and business communities as part of the global action line established in the Regional R&D Plan. The network has 36 members, including RTD centres, Universities, Trade and industry associations, etc. FCm+d plays an active role in the network coordination (www.madrimasd.org).

FCm+d is a non-profit organisation with three major units: 1) European Research Area office, 2) Knowledge Transfer office and 3) University Spin-offs and Technology-based Entrepreneurship office. FCm+d has a staff of 16 experts, mainly based in Madrid, with a small office in Brussels, acting in narrow contact with the Madrid Region R&D system (Universities, Public Research institutions and Private sector) and the Community of Madrid Regional Administration (DGUI).

INSTITUTO MADRILEÑO DE DESARROLLO

Created 1984 by a Regional decree, IMADE is a public body (Regional Development Agency) dependent of the Consejería of Economy of the Comunidad de Madrid. It has a staff of about 200 persons and a budget variable according to the size of the projects to implement in a defined period. Being in charge of economic promotion and infrastructures, the resources involved can be usually higher than 10 million euros per year.

The structure of activities of IMADE is as follows :

- Economic development support infrastructures (follow links for further information)

Here can be included the [Technology Parks and Clusters Network](#) , the [Logistic Centres](#) , the [Business Centres](#) and [Business Support Centres](#) (providing a friendly environment for development of new business initiatives supplying different support services), [Industry Parks](#) (addressing firms of different industry and services sectors, provide industrial land suitable for a variety of activities and [Industrial Areas Restoration](#) .

- Financial support programmes

Plan de Innovación Empresarial (PIE)

Multiannual programme of RDI support in Madrid firms, cofunded by the ERDF.

Programme InnoEmpresa

Programme supporting SMEs in cooperation with intermediary institutions, in order to promote technology and management innovation, co-funded by ERDF and the State Ministry of Industry (MICYT)

Other IMADE support measures

Programmes approved by the EU to support firm RDI, management and strategic investments for jobs creation and productive development.

- Information access services

Business Information Service on support measures and tools for business creation, as well as information for business associations and for other administrations.

One-Stop Business Window, offering full information on business projects and initiatives to start up companies

Territorial Promotion Offices addressing industrial promotion of different regional areas and providing the relevant information on the spot.

International Cooperation for consolidation of economic activities and extension worldwide – activities mainly developed through the IMADE subsidiary PROMOMADRID.

5. Strategies and action plans

Madrid regional strategy for science and technology

April 2005 the Comunidad of Madrid Government has approved its current strategy in the [IV Regional Plan of Scientific Research and Technological Innovation 2005-2008 \(PRICIT\)](#), which is guided by principles made coherent with those of the proposal of the "European Research Area" (ERA).

Its elaboration engaged 300 experts and 34 institutions, in addition to a virtual space of debate opened to the citizens of the region, what has allowed reaching a high degree of consensus. The process involves the Department in charge (Education

– D. G. Universities and Research), the Science & Technology Council (advisory body), the Regional Government and the Regional Parliament.

IV PRICIT includes a Program of new institutes of advanced research – IMDEA – to perform R&D activities in the fields of water, food, biomedicine, social sciences, energy, mathematics, materials, regenerative medicine, Internet, nanotechnologies and software.

In the definition of its objectives, the regional strategy does not forget cooperation, complementariness and integration at all the levels: interregional, with the State Administration, and European Union R&D policies. Consensus with the national Administration is essential, since it owns most of the R&D resources and infrastructures in Madrid.

In order to get a sound appraisal of the degree of fulfilment of the objectives the IV PRICIT is equipped with monitoring mechanisms and it foresees the evaluation of results and outputs. The Plan allocates a part of its internal resources for the follow-up and the evaluation of the impact of its programs in the regional environment. Thus, it will have to be managed in a flexible way, adapting its features to a changing environment, in order to fulfil the mission defined in the LEFICIT.

Preparation of the Plan is coordinated by a Plan Office (depending on the Consejería de Educación and D.G. Universities and Research, responsible of the whole of the Plan) in charge of organising the work of

- 20 task groups involving experts and
- the Monitoring Committee, in which are represented the regional all the main R&D stakeholders: Regional Government Departments, the State Administration, Madrid based Universities and Research Institutions, the business community (Associations, Chambers of Commerce) and professional bodies (OPTI, COTEC) as well as the Economic and Social Committee of the Comunidad de Madrid

Since 2005, the Comunidad de Madrid strategy and objectives in research and development incorporated in the PRICIT are complemented by the Technological Innovation Plan 2005-2007, elaborated by the Consejería de Economía through its D.G. of Innovation. It is directed to promote new initiatives to generate enterprise innovation and qualified industrial investment for manufacturing of high technology goods and services, able to act as leveraging synergies in the industrial and enterprise fabric of the Madrid Region. The development of this Plan has been included in the Agreement for employment and economic growth of the Comunidad de Madrid. In particular two lines of action have been emphasized: technological development infrastructures creation and development of high technology clusters.

This Plan has been developed after the recommendations of the White Book on Innovation in the Madrid Region, prepared by an independent institution (Fundacion COTEC), and is an important element for the development of the Comunidad de Madrid Strategy of Innovation as it is integrated and coordinated with the PRICIT.

Under the coverage of the Technological Innovation Plan 2005-2007, 3 sectoral Plans addressing the strategic industries in the region have been developed: Aerospace, ICT and Biotech. Those plans have been developed with participation of the stakeholders of the sector. As an example, the Aerospace Plan was based in a consensus between the Comunidad de Madrid and the industry, involving as well Local Administration, Universities and Research institutes and business associations (aeronautics- ATECMA, space - Proespacio). One of the main decisions of this Plan was the joint creation of the Aerospace Cluster participated by all the regional stakeholders in the sector.

Early 2008 a second Technology Innovation Plan issue which will cover the period 2008-2011 is under preparation using a similar methodological approach and involving regional stakeholders: out of a previous analysis of Regional needs, the Inter-departmental Commission of Science and Technology launches the process through the Consejería de Economía / D.G. Innovación (in coordination with Consejería de Educación / D. G. Universities and Research). It involves experts groups from the different Regional stakeholders in order to produce a document to be approved by the Council of Regional Ministers.

6. Public Private Partnerships and Regional policies

Public Private Partnerships / Coordinating processes or organisations

PPP partnership is in the basis of the R&D regional policy, as a couple of examples can show:

Research Partnerships

- the creation of the IMDEA – Instituto Madrileño de Estudios Avanzados : 10 regional research institutes under development since 2006, in the frame of the PRICIT, in the following fields: Nanoscience, Water Resources, Materials, Communication Networks, Mathematics, Software, Food, Regenerative Medicine, Social Science and Energy.

The IMDEA is lead by Comunidad de Madrid which supplies resources from the PRICIT, involving all the Regional ministries and the private initiative from the very beginning. Therefore, Administration, industry, universities and research institutions cooperate in knowledge production in the region, engaging a professional and efficient management. One of its priorities is the incorporation of world class researchers.

Innovation Partnerships

- The Clusters Network, created under the coverage of the Technological Innovation Plan 2005-2007 which is financing the launching and implementation stage of all the clusters.

Strategic clusters are under implementation in the following fields: Aerospace, Biotech, ICT Security, Audiovisual, Logistics, Health, Finance, Automotive, Printing & Publishing. The clusters have under development their Innovation and research agendas, coordinated with other entities such as the Spanish Technology Platforms (mirrors of the European Technology Platforms)

They are currently at different levels of development, being the most advanced:

- o Biotech (core firms and entities: Biotools, ZF Biolabs, Agrenvec, Pharmamar, Genetrix, Ingenasa, IMADE)
- o Aerospace (core firms and entities: ATECMA, EADS, Universidad Politécnica, IMADE)
- o Madrid Logistic Platform, involving the most important companies in the region, which is at the moment developing a Technology Centre of Logistics and Transport.
- o Madrid Centro Financiero, which involves most of the main financial entities in the region (Banco Santander, BBA, Caja Madrid, etc.) and is focused towards promoting the Madrid role as a world-class financial centre.
- o ICT Security (core firms and entities: Certifying institutions - Fábrica de la Moneda y Timbre, Cámara de Comercio, Centro Criptológico Nacional, -, IMADE, AETIC, INDRA, GMV, AMPER, TELEFÓNICA I+D, SECUWARE.

Audiovisual industry (core firms and entities: IMADE, Telemadrid, Philips, TSA, TVE, Grupo Árbol, Infinia, Grupo Kiss, UPM, AETIC ETSIT, FAPAE)

F. Coordination and networking: cooperation between stakeholders

Most of the public institutions and organisations related to RDI in Madrid are located in a surface not larger than 3,000 sq. km what facilitates the inter-connection and collaboration. Coordination structures also help networkig and development of common endeavours. The main ones are :

Universities coordination

Created 2003, the Conferencia de Rectores de las Universidades Madrileñas (CRUMA) is the coordinating body of the Madrid public universities (Universidad de Alcalá de Henares, Universidad Autónoma de Madrid, Universidad Carlos III, Universidad Complutense de Madrid, Universidad Politécnica de Madrid y Universidad Rey Juan Carlos). It is the a regional body mirroring the national Conferencia de Rectores de las Universidades Españolas (CRUE)

CRUMA's objectives are the defence of common interests in higher quality education, in the frame of the universities autonomy in the region of Madrid, promoting cooperation among universities and with public Administration. Its rotating president is an elected Rector of one of the member universities.

Technology/Science Parks and Clusters Network

IMADE is managing the Technology/Science Parks and Clusters Network, coordinating on one side the 4 Technology Parks promoted by the Comunidad de Madrid in Getafe, Leganés, Móstoles y Alcalá de Henares. Two new projects will be also developed in the next future: the City of Finance in Boadilla and City of Knowledge in Conocimiento en Colmenar Viejo. In total these Parks will cover a surface of 1.174 Ha, offering room for more than thousand firms through a public investment of 1.147 million euros. IMADE has also created the Clusters Network , which coordinates the 9 regional clusters : Finance, Biotech, Aerospace, Logistics, ICT Security, Audiovisual, Automotive, Health and Printing & Publishing

This network allows a narrow interconnection amongst the companies located in the largest business infrastructures of the region, as well as easier access to the regional new R&D institutions (IMDEA) and close connection with the activities of the madrimasd Network.

Network of Laboratories and Research Infrastructures

It is involving a growing number of public services centers and laboratories, normally belonging to Research Institutions and Universities. They cooperate in order to upgrade their facilities according to international standards, to train their technical staff and to improve the services for researchers and companies.

The members are different Organizations, with different organizational cultures, and internal methods working in different scientific areas (Physics, Chemistry, Biology,..). Currently, 196 laboratories belonging to 17 Organizations (8 Universities, 7 Research institutions, 1 Technology Park and 1 private laboratory) are part of the Network.

Network mission is to disseminate the scientific and technical potential of the members, support the laboratories and the services they provide, and improve the management adopting international quality standards. Among the benefits the members receive being part of the network are information, training, Quality Management advise, promotion of intercomparisons and laboratories collaboration; meanwhile for companies better access to lab services is provided, together with metrology and quality consults and other services.

Madrimasd network

It is the most important regional structuring network existing at the moment.

Context

In 1997 as a result of the regional innovation strategy design in the frame of the RITTS/RIS Program, an integrated approach ("Sistema madrI+D") (I+D is the Spanish acronym for R&D) to deal with the mentioned challenges has been adopted by the Comunidad de Madrid.

The madri+d system has been created with specific goals: promote scientific quality of Madrid research, stimulate technology innovation and joint actions between the scientific and business communities, co-ordinate actions among universities and research institutions, develop a framework to encourage the creation of companies from research projects, co-ordinate scientific research and technology development activities with regional, national and international organizations, maintain information and communication facilities to link scientific, industrial and technological communities and participate in European R&D programs.

Members

All 7 public universities, plus the private ones and research institutions based in Madrid (CSIC – National Research Council, INTA –National Aerospace Institute, etc.), as well as business associations (mainly the Regional Confederation of Industries – CEIM) became formal members of the madri+d network, being their commitment to madri+d system guaranteed by agreements that include work plans funded by the Regional Plan of Research and Innovation.

Missions

Among the outstanding long-term activities of the system madri+d we will mention:

- Development of technology transfer involving the madri+d members. The system has adopted at regional level approached and procedures developed by the Innovation Relay Centers Network to support their international technology transfer activities. Among the madri+d electronic tools developed to manage the activities, it is to be outlined a technology marketplace allowing the direct management by the users of their technology offers and demands.
- A Network of Laboratories and Research Infrastructures has been created involving 165 public services centers (material essays labs, technical centers, etc.) that are supported to upgrade their facilities according to international standards and improving their organization and services for researchers and companies.
- The Innovation Circles, program which has been conceived as an space of dialogue for researchers and companies and a support to the clustering processes at work in the Madrid region, develop technology watch (TW) and economical and technological intelligence (ETI) services both for business associations and SMEs while incorporate researchers and experts from different fields. Four Circles exist at the moment (biotechnology; materials, nanotech and aerospace technology, environment & energy, information technologies and communications) hosted by regional research centers.
- A support program for the creation of technology-based firms is working at three levels: support to academic institutions in their activities for awareness and identification of entrepreneurs; support for firms in preparation of business plans and constitution through mentoring and coaching actions; help for start-ups during 3 years for developing management abilities (marketing and communication, financial, negotiation, etc.), and finally search of location and funding through established agreements with financial organizations and the madri+d own Business Angels Network (BAN)
- A Science in Society programme together with information and communication services are strongly promoting citizens' participation in order to attain their support and co-responsibility in regional policies of science and technology: the "Madrid and the Science" program receives more than 140.000 visitors (high-school students, researchers and innovating companies) along three days every year; also, the Science Week developed in 2006 more than 550 open-day activities. This programme has created also a network of university science museums and a contest on architectonic spaces for science.