

Background information on research and innovation in Aragon – Palma de Mallorca RIS 3 meeting, February 2013

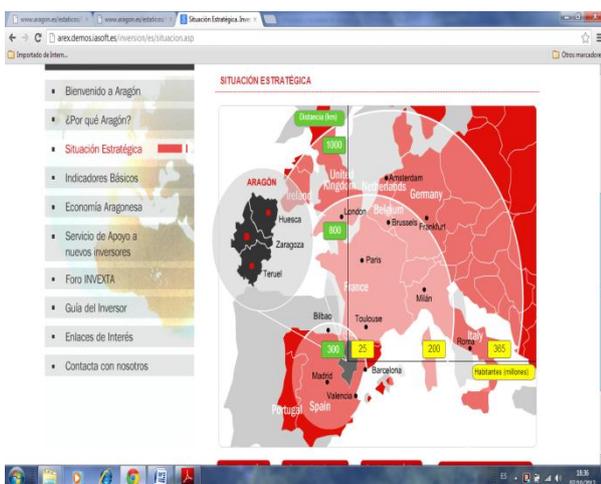
Key socio economic data

Aragón is proud of its geostrategic location in the northern part of Spain between the Atlantic and Mediterranean axes, mainly from a national perspective. The 136 km shared with France are split by Pyrenees which hinder the cross border cooperation. Madrid and Barcelona can be reached from Zaragoza with the high speed train in less than one hour and a half. Aragon offers good direct connections with many international airports and owns one of the largest logistic platforms of Europe.

Aragón is facing strong demographical challenges. Its ageing 1,350,000 million inhabitants represent 2,9% of the Spanish population. The territory of Aragon is larger than Belgium, it covers 9,4% of Spain, but the Region suffers from a low density : 28,2 inhabitants/km² as an average. More than 700,000 people, half of the whole population, are living in Zaragoza, the capital city.

Aragón is more industrial than the average of Spanish regions. Industry including energy represents 22% of its GDP and 20% of its workforce. 50% of industry covers metal industry, food process and machine equipment. Energy and water management also play an important role in a Region where the climate change is another challenge as this is the case in most Spanish Regions. 70% of Aragon's energy consumption comes from renewable sources. Most of services are located in Zaragoza. The city of Zaragoza is very active in innovation mainly in digital services, mobility and energy.

A large majority of companies are small and medium including in the car industry around a large plant of General Motors. The lack of critical mass in several sectors encourages us to be more active internationally and to cooperate with other Regions along the value chain of innovation. Aragon has a good tradition of social dialogue.



Education, research and innovation

The University of Zaragoza plays a major role in Aragon with its 35000 students (including many Erasmus students) and nearly 4000 professors and researchers.



<http://www.unizar.es>

The interface between the University and research is mainly in the hands of strong “University Research Institutes”. These institutes are particularly active in fields such as engineering <http://i3a.unizar.es>, IT complex systems with the support of a super computer <http://bifi.unizar.es>, nanosciences <http://ina.unizar.es>, mathematics, physics, environment and materials. The University has also set up since 1988 “Oficinas de transferencia de resultado de investigacion (OTRI)” <http://www.unizar.es/otri/index.jsp> aiming at fostering the cooperation between researchers and companies. These centres are not limited to the University, 18 OTRI are presently registered in Aragon.

A private University: San Jorge was created in 2005.



<http://www.usj.es>

Main research centres and fields

Research is organized in Spain both at a national and regional level. The “Consejo Superior de Investigaciones Científicas (CSIC)” is well represented in Aragon <http://www.dicar.csic.es>. The main research centres of CSIC at the level of the region are the “Estación Experimental Aula Dei”, the “Instituto Pirenaico de Ecología” and the “Instituto de Ciencia de Materiales de Aragón” (mainly agrofood, environment and materials).

More over, Aragon is well equipped in research. The main research centres are focusing on

- agronomy and agrofood in the “Centro de Investigación y Tecnología Agroalimentaria (CITA) <http://www.cita-aragon.es> which is a public body supported by the Region of Aragon and in the “Instituto Agronomico Mediterraneo” <http://www.iamz.ciheam.org/es> (cooperating with other mediterranean regions in the field of agronomy)
- logistics in the “Zaragoza Logistic Center” (ZLC) <http://www.zlc.edu.es> which benefits from a strong cooperation with the MIT (Massachusetts Institute of technology)
- health in the “Instituto Aragonés de Ciencias de la Salud (IACS)” <http://www.iacs.aragon.es/awgc>, the “Centro de Investigación Biomédica de Aragón (CIBA)” and the “Instituto de investigación Sanitaria de Aragón (IIS)”
- space in the “Centro de Estudios de Física del Cosmos de Aragón (CEFCA)” <http://www.cefca.es> and in the “Fundación Aragonesa para el Desarrollo de la Observación de la Tierra (FADOT)” <http://www.fundacionfadot.es> created in 2010 at the initiative of the Region of Aragon

Technology and innovation

Aragon has no regional innovation agency as such but several players are active in technology transfer. The most important one in this field is the “Technological Institute of Aragon”. It was created in 1984 at the initiative of the Region of Aragon aiming at promoting applied research and innovation in companies in a very concrete way. It is frequently involved in the preparation and implementation of European projects in the field of research and innovation. It also plays an important role in the field of training thanks in particular to a “Master in innovation” which was launched five years ago.



The “Centro de Investigación de Recursos y Consumos Energéticos (CIRCE)” is active in the field of energy. It was created in 1993 with the support of the University.



The “Aitiip Centro Tecnológico” also acts as technological center specialized in plastics and composite materials. It was set up in 1995 and converted into a private foundation in 2003.



Scientific and technological parks

Four main parks can be found in Aragon:

- the technological park WALQA <http://www.ptwalqa.com> in the field of ICT, biotechnology and renewable energy, created in 2002 at the initiative of the Region of Aragon and the City of Huesca, 80 km in the north of Zaragoza
- the technological park AULA DEI <http://www.zaxpark.com/web/guest> with a strong focus on agrofood and environment, created at the initiative of the Region of Aragon and CSIC
- the technopark MOTORLAND <http://www.parquetecnologicodelmotor.com/index.aspx>
- the technological park Lopez Soriano <http://www.ptr.es> dedicated to recycling industries.

Other structures of support to innovation

Several other structures play an important role in Aragon.

One is the “Instituto Aragonés de Fomento (IAF)” acting as a public agency of regional development. It contributes to supporting industrial infrastructures in the whole territory of Aragon with a special attention to SMEs. The IAF is member of EURADA.



The “Centro Europeo de Empresas e Innovación de Aragón (CEEI Aragón)” belonging to “European Business Network” is the main incubator centre of Aragon. It aims at supporting the creation of innovative companies.



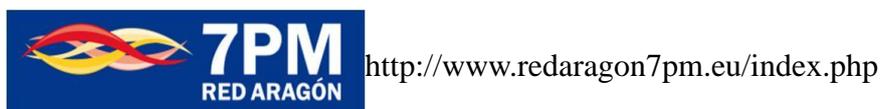
The “Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón” is a private structure promoting the applied use of hydrogen. It was created in 2004 with the support of the Region of Aragon.



The “Agencia aragonesa para la investigación y el desarrollo (ARAID)” was created by the Region of Aragon in 2005. It aims at supporting I+D+i in Aragon through support schemes to researchers in particular.



The “Red Aragón 7PM” acts as a network aiming at getting the best out of the 7PM opportunities until 2013 thanks to a strong cooperation between various Aragonese structures. The coordinator of this network belongs to the University. This network is particularly active in Brussels, it contributes to the involvement of Aragon in the “European Innovation Partnerships” (Water, Smart cities) and ERRIN.



Economic and social players

Aragón does not differ much from other Spanish regions as regards the representation of economic and social players through structures such as CREA (www.crea.es) and CEPYME (www.cepymearagon.es) on the employers' side. The association of young entrepreneurs is very active. The UGT and CCO are the main trade unions. Three Chambers of commerce and industry also play an important role in Zaragoza (www.camarazaragoza.com), Huesca and Teruel.

Clusters are other key players in Aragon, mainly in the industrial sector, in particular in agrofood INNOVALIMEN, logistics ALLIA, TIC TECNARA and IDIA, automobile CAAR, water management ZINNAE and aeronautics AERA. A meeting of the Presidents of the main clusters was organized in November 2012 aiming at promoting a more active cooperation between clusters. ALLIA and ZINNAE are involved in two EU FP 7 “Regions of Knowledge” projects.

Policy of Aragon in the field of research and innovation

The first strategy of Aragon for research and innovation (I PAID) was set up in 2002 for the period 2002-2004.

A second strategy was adopted in 2004 (II PAID) for the period 2005-2008. It includes four axes in a detailed way: actions related to human resources, support to I+D through funding and research infrastructures, support to technological transfer and diffusion of research and innovation.

Moreover Aragon adopted a strategy for innovation INNOVARAGÓN 2010-2013 which is consistent with the national strategy of innovation adopted in Spain in June 2010. The national strategy E2I aims at moving Spain to the 9th position in the ranking of innovation at an international level. INNOVARAGÓN was conceived in a period of growth in Aragon based on the impact of the International Exhibition of 2008 linked with the opening of a high speed train station.

INNOVARAGÓN aims at placing Aragon in the first third of innovative regions at a European level (among the 70 most innovative regions) through an increase in private and public funding on R+I. It includes five main objectives and a precise Action plan (see next page).

These strategic documents are giving us a good point of departure and are encouraging us to give weight to a more participatory process in the design of the future Aragonese Innovation strategy. A good dialogue with the City of Zaragoza will also help us to give consistency to the strategy as regards “smart cities and territories”.

Action plan INNOVARAGÓN

Líneas de actuación		Programas		Objetivos estratégicos				
				Sensibilizar	Focalizar	Capacitar	Abrir	Ejecutar
LA 1	Sensibilización para innovar	P 1.1	Implantación de la cultura innovadora aragonesa	●	●	◐	○	○
		P 1.2	Sensibilización del tejido empresarial para sistematizar la innovación	●	○	○	◐	○
LA 2	Capacitación para innovar	P 2.1	Formación para una sociedad aragonesa innovadora	●	○	●	○	○
		P 2.2	Capacitación de las personas en innovación	○	○	●	◐	○
		P 2.3	Democratización de la innovación en las empresas aragonesas	○	○	●	●	○
		P 2.4	Movilidad de las personas para la innovación	○	○	●	●	○
LA 3	Empresa aragonesa innovadora	P 3.1	Aprender a innovar	◐	◐	◐	●	●
		P 3.2	Apoyo a proyectos de I+D+i	◐	◐	◐	●	●
		P 3.3	Apoyo a las inversiones para la innovación	◐	◐	◐	○	●
		P 3.4	Implantación de las TIC	◐	◐	◐	○	●
		P 3.5	Alianzas para la innovación abierta	◐	◐	◐	●	●
LA 4	Emprendizaje innovador en Aragón	P 4.1	Apoyo a la creación de empresas innovadoras	○	◐	◐	◐	◐
		P 4.2	Apoyo a nueva empresas innovadoras de rápido crecimiento	○	◐	◐	◐	◐
LA 5	Apuestas sectoriales para la innovación abierta	P 5.1	Clusters para la innovación abierta	○	●	◐	●	●
		P 5.2	Apoyo a la innovación colectiva	○	●	○	●	◐
LA 6	Acciones horizontales	P 6.1	Servicios de soporte a la innovación	○	◐	○	◐	◐
		P 6.2	Capacitación innovadora y comercial de la oferta científico tecnológica	○	○	◐	●	◐
		P 6.3	Infraestructuras de soporte a la innovación	◐	●	◐	●	◐
		P 6.4	Plan de marketing y comunicación	●	◐	◐	◐	◐

Policy of Aragon in the field of TIC and information society

Aragon adopted a first strategic planning for infrastructures of telecommunication. A second one, adopted in 2009 relates to information society, over the period 2009-2011. It includes seven axes: infrastructures, digital community, digital services, TIC in SMEs, TIC business component, electronic administration, TICs in strategic areas. It insists on the contribution of TIC in order to face the geographical challenges of the large aragonesese territory

Much attention was devoted over the last years in order to reach the EU 2020 objectives aiming at providing 100% of the population with a large broadband at the level of 30 Mbps and 50% at the level of 100 Mbps. The Region also launched an important process of opening of public sources, on the basis of an agreement reached in July 2012, and would like to promote “e-commerce”. These tasks were facilitated by the Aragon Observatory of Information Society.

TICs are also considered as one of the key priorities in the Aragonese Strategy for competitiveness and growth which was adopted by the Region of Aragon in July 2012. This document considers that TIC represent 2,3% of the GDP of Aragon and employ 9000 people.

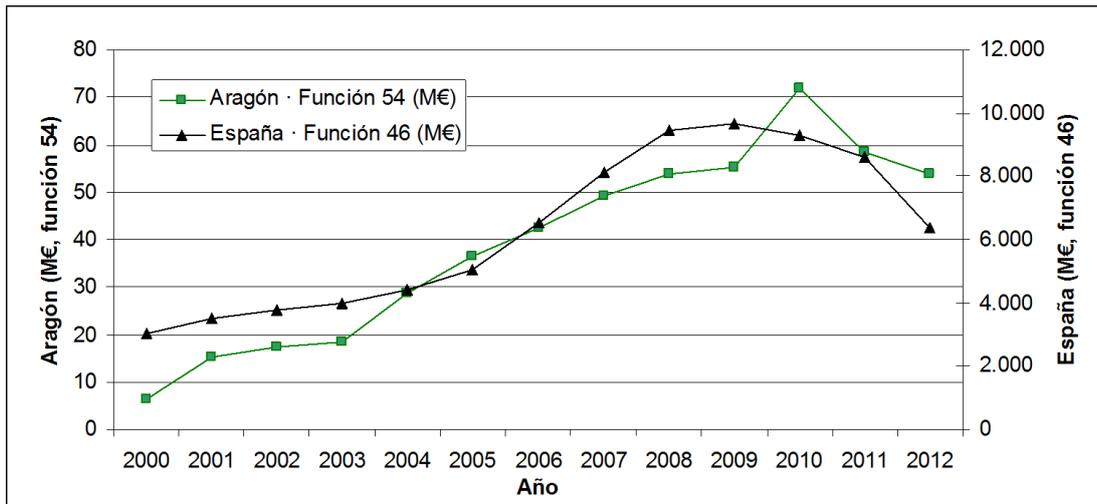
Research and innovation in Aragon: latest trends

The main initiatives taken by the Region of Aragon in 2011 and 2012 took place in the frame of the strategic planning previously described, both from a national and regional perspective. This implementation was however hindered by the slowdown of the Spanish economy and its impact on the public and private spending in R+I+i. The budget line 46 of the budget of Spain devoted to “research, development and innovation” amounted to 8590 million of Euros in 2011, corresponding

to 7,4% less than in 2010. The 6398 million of Euros foreseen in the same budget line for 2012 mean a reduction of credit by 25% in comparison with 2011. At the level of Aragon, a budget line 54 relates to “scientific, technical and applied research”. The credit for 2011 amounted to 58,5 million of Euros corresponding to 18,5% less than in 2010. The credit foreseen for 2012 amounts to 54 millions of Euros.

Evolution of credit in budget lines 54 (Aragón) and 46 (Spain).

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Aragón · Función 54 (M€)	6,34	15,13	17,38	18,55	28,51	36,44	42,35	49,1	53,9	55,2	71,9	58,5	53,96
España · Función 46 (M€)	3.048,0	3.521,6	3.792,0	4.001,0	4.414,2	5.018,1	6.545,7	8.123,9	9.437,8	9.673,0	9.274,2	8.589,8	6.397,6
Variación Aragón %		138,64	14,87	6,73	53,69	27,81	16,22	15,94	9,78	2,41	30,25	-18,64	-7,76
Variación España%		15,54	7,68	5,51	10,33	13,68	30,44	24,11	16,17	2,49	-4,12	-7,38	-25,52



Aragon tends to fluctuate among the Spanish regions around the average. Spain devoted 1,39% of its GDP to R+D in 2010 and Aragon ranked 7° at the level the level of 1,15% far behind the four regions which were beyond the Spanish average: Madrid (2,07%), Basque Country (2,03%), Navarra (2,02%) and Catalogne (1,65%). The figures for 2011 and 2012 show however a strong deterioration of the situation in all Spanish regions.

Gastos internos en actividades de I+D Aragón y España.

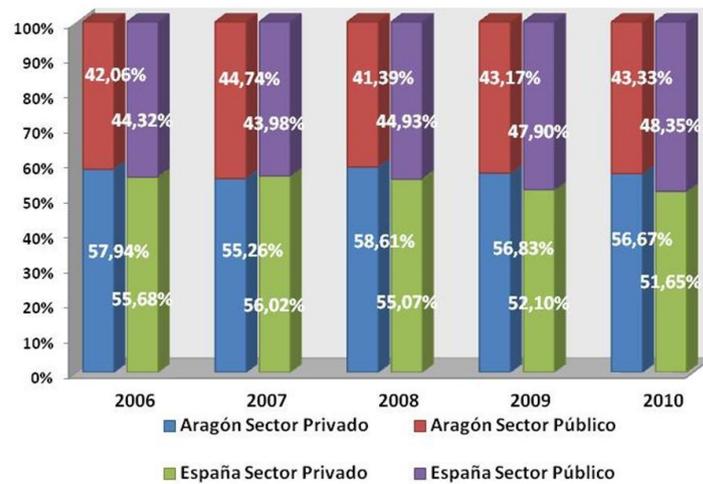
Porcentaje sobre el Producto Interior Bruto

	2006	2007	2008	2009	2010
Aragón	0,88	0,90	1,03	1,14	1,15
España	1,20	1,27	1,35	1,38	1,39
Posición	9°	12°	8°	5°	7°

Fuente: INE según la Estadística sobre actividades de I+D.

The private spending on R+D remains however slightly higher in Aragon than in average in Spain.

Gastos internos en actividades de I+D. Aragón y España
Porcentaje sobre el total de sectores



The latest results of the “Regional Innovation Monitor” are more encouraging for Aragón which was seen as a “moderate innovator” until 2009 but reached the group of “innovation (low) followers” in 2011 and 2012.

http://ec.europa.eu/enterprise/policies/innovation/files/ris-2012_en.pdf

In short Aragón offers a rather complex and patchy ecosystem in research and innovation which is suffering from the present situation of crisis. The Regional Authority is however well aware of its strengths and weaknesses and intends to get the best out of the coming opportunity of a regional innovation strategy. The reinforcement of cooperation with other Regions of Europe will be key in this frame.