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CONSEJERÍA DE ECONOMÍA Y CONOCIMIENTO



ANDALUSIAN KNOWLEDGE SYSTEM INDICATORS

-2016-

Andalusian Knowledge Agency
Technology & Foresight Studies Department
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■ ■ ■ INTRODUCTION

The aim of this report, carried out under the Andalusian Plan for Research, Development and Innovation (PAIDI), is to offer a diagnosis of the state of the Andalusian Science and Technology System in 2016¹.

The information sources mainly come from official entities such as: the National Statistics Institute (INE); the Spanish Patent and Trademark Office (OEPM); the Ministry of Economy, Industry and Competitiveness; the Andalusian Regional Government Budget Economic and Financial Report (Andalusian Regional Ministry for Finance and Public Administration); the General Direction for Research and Transfer of Knowledge (DGITC) under the Andalusian Regional Ministry for Economy and Knowledge (CEC); the Industrial Technological Development Centre (CDTI), the Ministry of Education, Culture and Sport (MECD) and the Institute for Scientific Information (ISI).

The Technology and Foresight Studies Department and the Andalusian Knowledge Agency, taking into account the above sources, has done the following:

- Compilation, tabulation and graphical representation of all the indicators and statistics provided by the most relevant international, national and regional official entities;
- Development of the statistics on the Andalusian researchers participation in the Horizon 2020, the R&D&I National Plan and PAIDI;
- Temporary evolution representation of the most relevant variables and, if it was possible, displaying regionalised information by Autonomous Communities to facilitate comparative analysis.

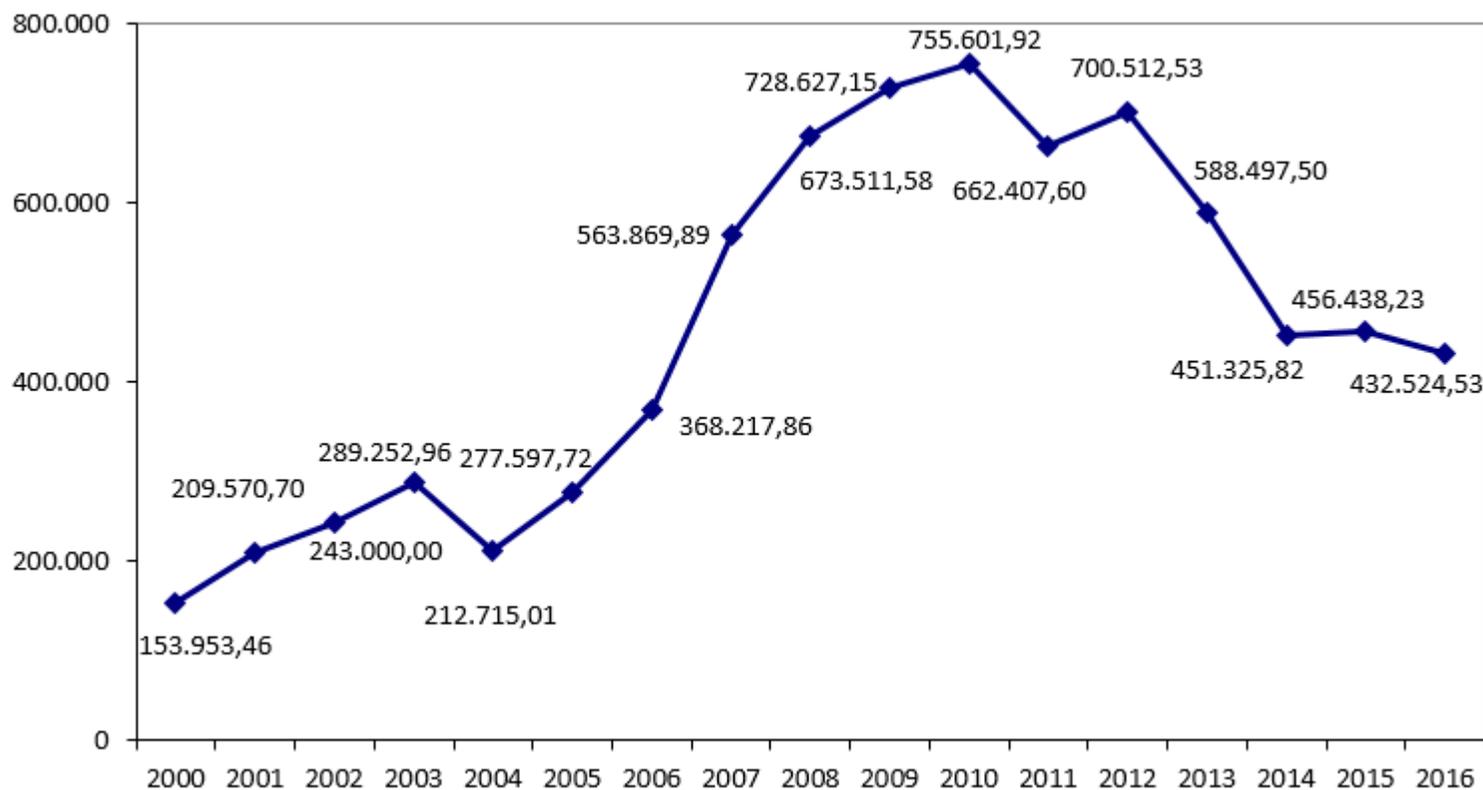
The information contained in this report is organized into seven major sections:

- Financial Resources: figures reported on public funding provided by the Andalusian Regional Government R&D Budget as well as by the R&D internal expenditure by sectors, both in absolute and inter-annual variation rates.
- Human Resources devoted to scientific-technological activities: data offered according to sectors, occupation, academic qualification and gender.
- PAIDI Actions: a set of indicators showing actions undertaken within the frame of the PAIDI Plan, which display the policies and adopted actions evolution.
- Innovation: expenditure on innovative activities; R&D companies regarding its technological level and the number of innovative companies by type, size and intensity of innovation.
- Tangible Outputs: results of R&D&I activities provided by the industrial property registries, by indexed scientific articles as well as by the participation in national and international R&D&I programmes.
- High Technology: indicators shown are R&D internal expenditure, R & D personnel, staff employed and turnover.
- Biotechnology: R&D internal expenditure by sector of employment and personnel employed to R & D dedicated to biotechnological activities.

¹At the close of this report, some calls have not yet been resolved, therefore, just the latest available ones, have been considered.

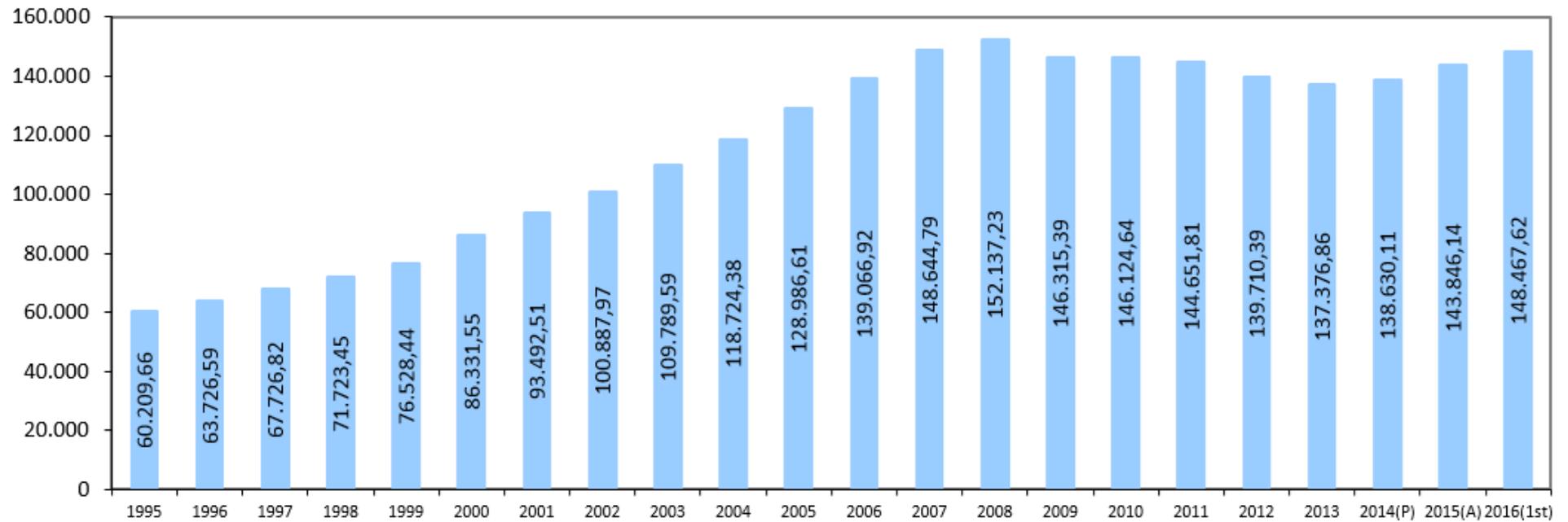
FINANCIAL RESOURCES

■ The Andalusian Regional Government R&D own funds (thousand €). 2000-2016



Note: In 2004 and 2005, the publications of the Economic and Financial Reports differ, according to the budgetary programmes reallocation policies
 Source: Economic and Financial Reports. Andalusian Budget and own compilation

■ **GDP at market prices based 2010 (million €). 1995-2016**



Note: (P) Provisional estimate

(A) Advance estimate

From the year 1995 up to 2000: GDP mp base 1995

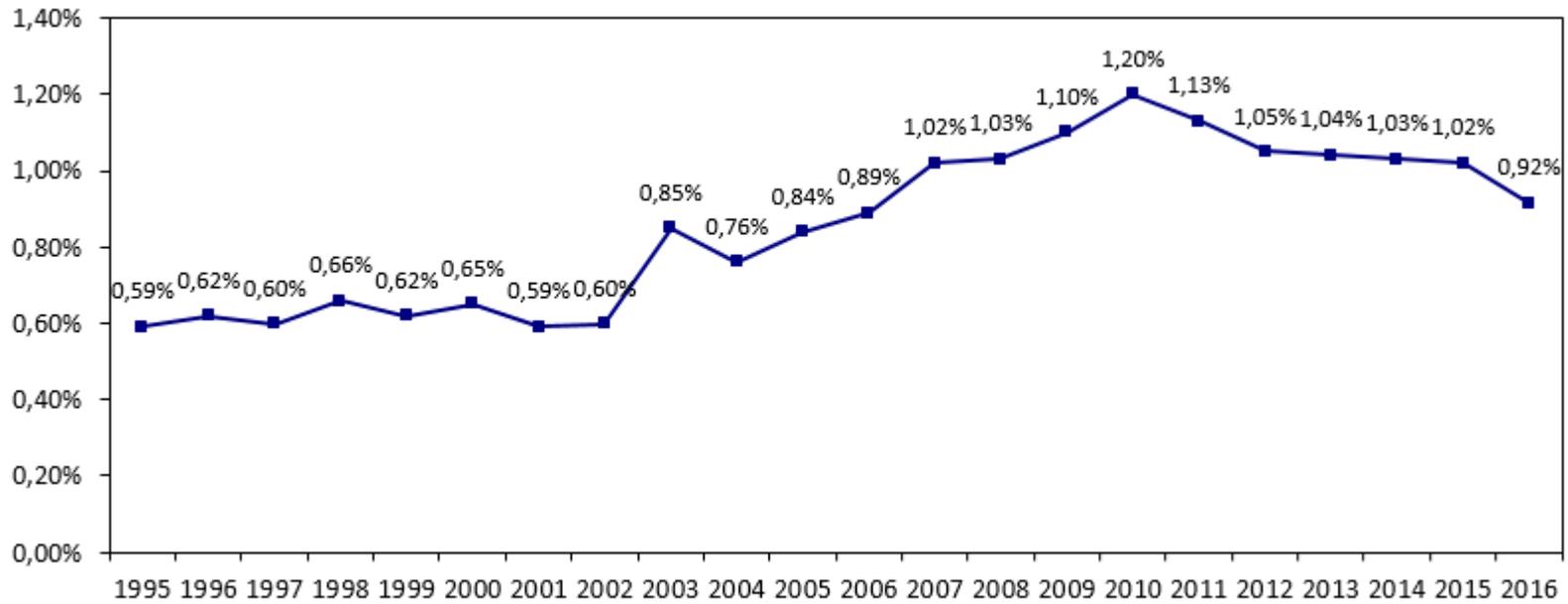
From the year 2000 up to 2008: GDP mp base 2000

From the year 2008 up to 2010: GDP mp base 2008

From the year 2010 up to 2014: GDP mp base 2010

Source: INE and own compilation

■ **R&D internal expenditure percentage on regional GDP. 1995-2016**



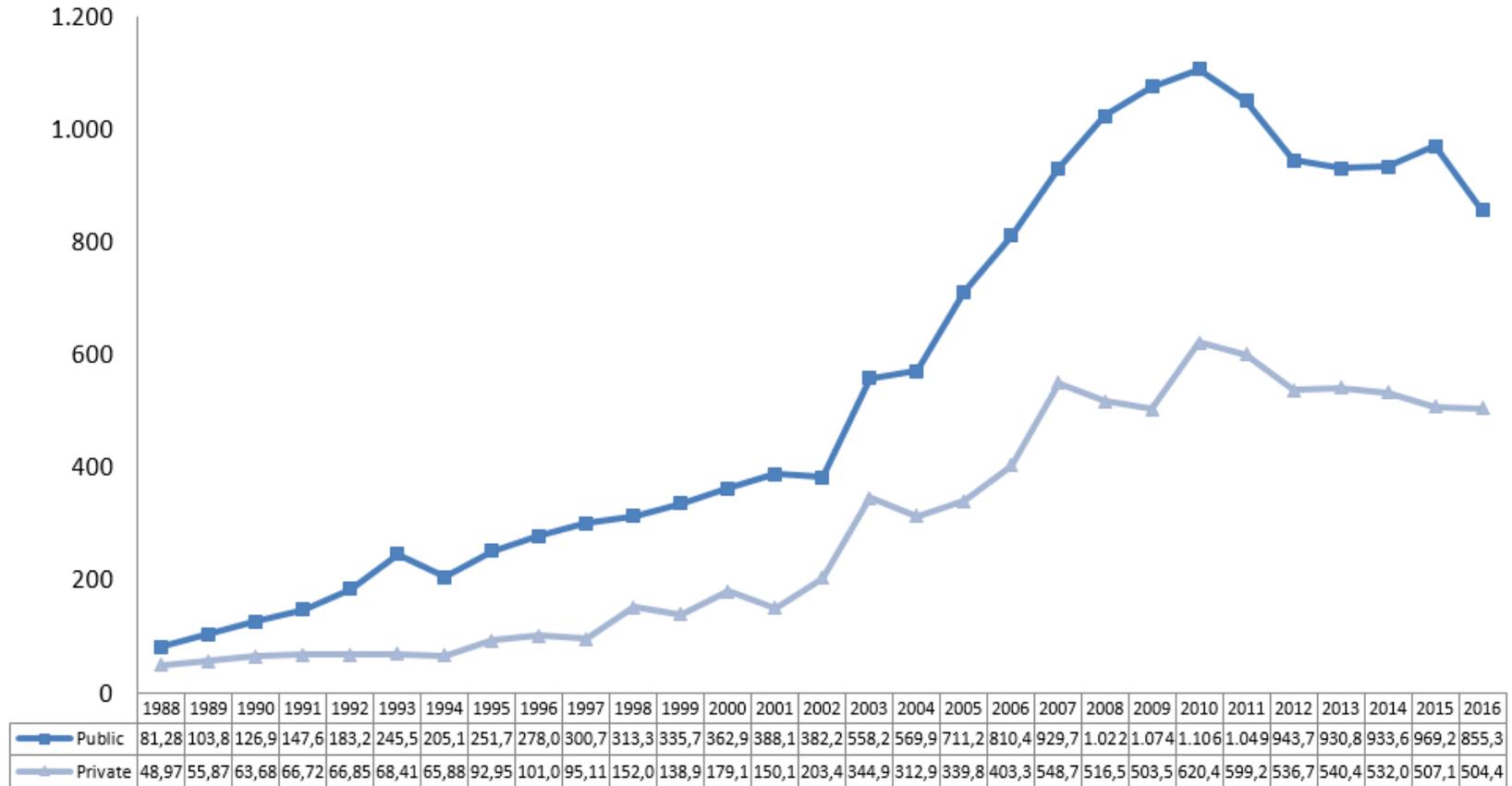
Source: INE and own compilation

■ R&D internal expenditure by sectors of performance (thousand €). 1988-2016

YEAR	UNIVERSITY		PUBLIC ADMON		COMPANIES		PNPI		TOTAL
	Amount	%	Amount	%	Amount	%	Amount	%	
1988	41.853,52	-	39.430,61	-	48.965,29	-	0,00	-	130.249,41
1989	60.932,78	45,6%	42.889,45	8,8%	55.872,34	14,1%	0,00	-	159.694,57
1990	79.314,47	30,2%	47.606,54	11,0%	63.684,55	14,0%	0,00	-	190.605,56
1991	93.852,90	18,3%	53.838,14	13,1%	66.717,91	4,8%	0,00	-	214.408,95
1992	131.358,05	40,0%	51.903,36	-3,6%	66.850,04	0,2%	0,00	-	250.111,45
1993	188.780,15	43,7%	56.787,21	9,4%	68.302,41	2,2%	111,19	-	313.980,95
1994	148.863,25	-21,1%	56.238,28	-1,0%	65.772,72	-3,7%	109,34	-1,7%	270.983,58
1995	178.006,33	19,6%	73.722,48	31,1%	91.887,83	39,7%	1.064,19	873,3%	344.680,83
1996	199.445,87	12,0%	78.606,37	6,6%	99.960,33	8,8%	1.129,90	6,2%	379.142,48
1997	228.351,45	14,5%	72.399,09	-7,9%	94.075,91	-5,9%	1.029,88	-8,9%	395.856,34
1998	227.240,58	-0,5%	86.094,11	18,9%	150.869,38	60,4%	1.198,40	16,4%	465.402,47
1999	240.496,55	5,8%	95.258,05	10,6%	137.475,62	-8,9%	1.496,11	24,8%	474.726,34
2000	259.897,00	8,1%	103.092,99	8,2%	177.431,00	29,1%	1.735,00	16,0%	542.155,99
2001	269.030,00	3,5%	119.113,00	15,5%	149.510,00	-15,7%	678,00	-60,9%	538.331,00
2002	275.261,65	2,3%	106.936,35	-10,2%	203.100,65	35,8%	368,35	-45,7%	585.667,00
2003	403.997,00	46,8%	154.231,00	44,2%	344.246,00	69,5%	678,00	84,1%	903.152,00
2004	390.418,00	-3,4%	179.568,00	16,4%	312.062,00	-9,3%	865,00	27,6%	882.913,00
2005	467.762,00	19,8%	243.434,00	35,6%	338.761,00	8,6%	1.071,00	23,8%	1.051.028,00
2006	527.245,00	12,7%	283.184,00	16,3%	402.995,00	19,0%	392,00	-63,4%	1.213.816,00
2007	592.828,00	12,4%	336.946,00	19,0%	548.041,00	36,0%	730,00	86,2%	1.478.545,00
2008	661.049,00	11,5%	361.330,00	7,2%	515.612,00	-5,9%	955,00	30,8%	1.538.946,00
2009	683.680,00	3,4%	390.855,00	8,2%	501.471,00	-2,7%	2.079,00	117,7%	1.578.085,00
2010	723.401,00	5,8%	382.958,00	-2,0%	619.489,00	23,5%	917,00	-55,9%	1.726.765,00
2011	708.973,00	-2,0%	340.204,00	-11,2%	598.228,00	-3,4%	1.066,00	16,2%	1.648.471,00
2012	626.914,00	-11,6%	316.838,00	-6,9%	534.765,00	-10,6%	1.943,00	82,3%	1.480.460,00
2013	626.118,00	-0,1%	304.689,00	-3,8%	538.425,00	0,7%	2.029,00	4,4%	1.471.261,00
2014	631.154,00	0,8%	302.498,00	-0,7%	529.978,00	-1,6%	2.109,00	3,9%	1.465.739,00
2015	650.766,00	3,1%	318.516,00	5,3%	505.671,00	-4,6%	1.499,00	-28,9%	1.476.451,00
2016	579.023,00	-11,0%	276.331,00	-13,2%	501.757,00	-0,8%	2.685,00	79,1%	1.359.795,00

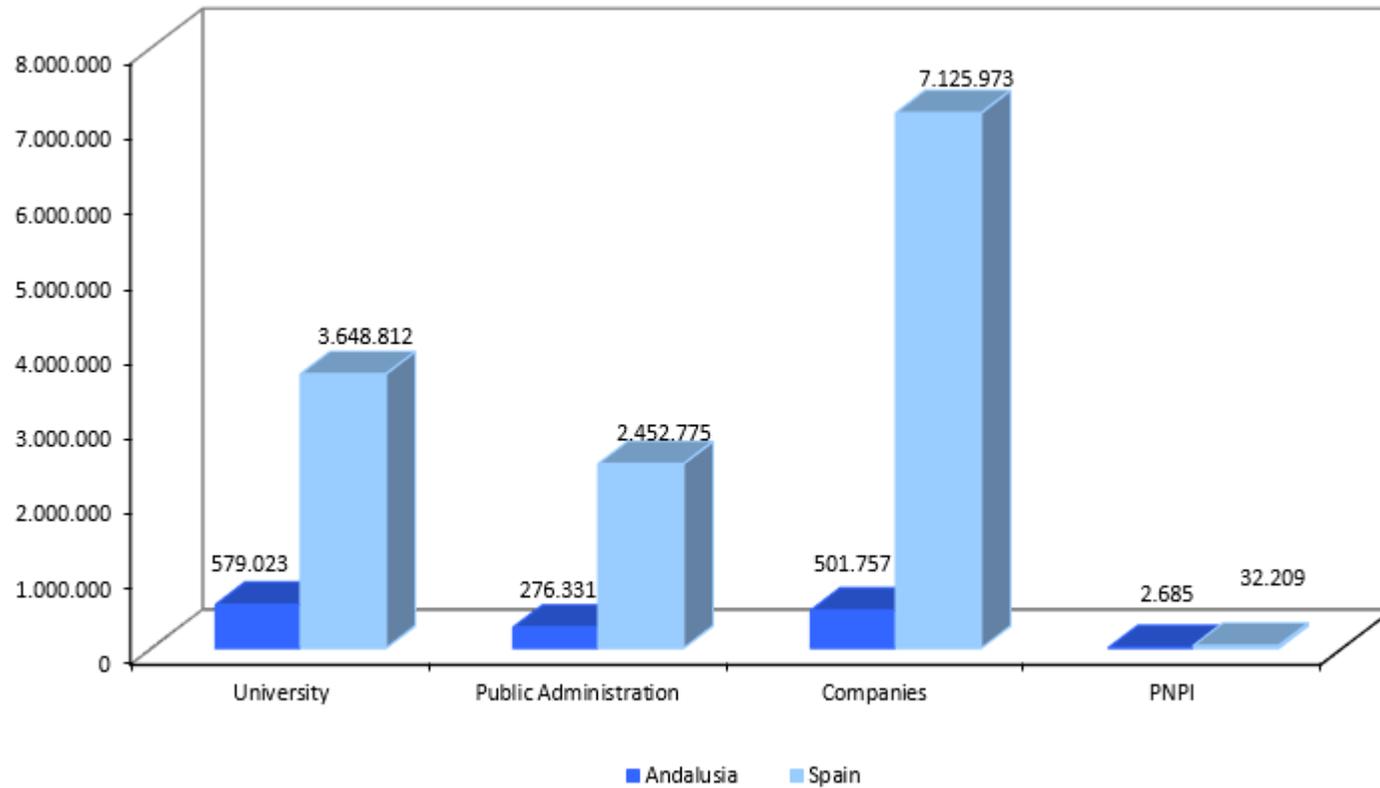
Note: PNPI - Privates non-profit institutions
Source: INE and own compilation

■ R&D internal expenditure by public and private sectors (thousand €). 1988-2016



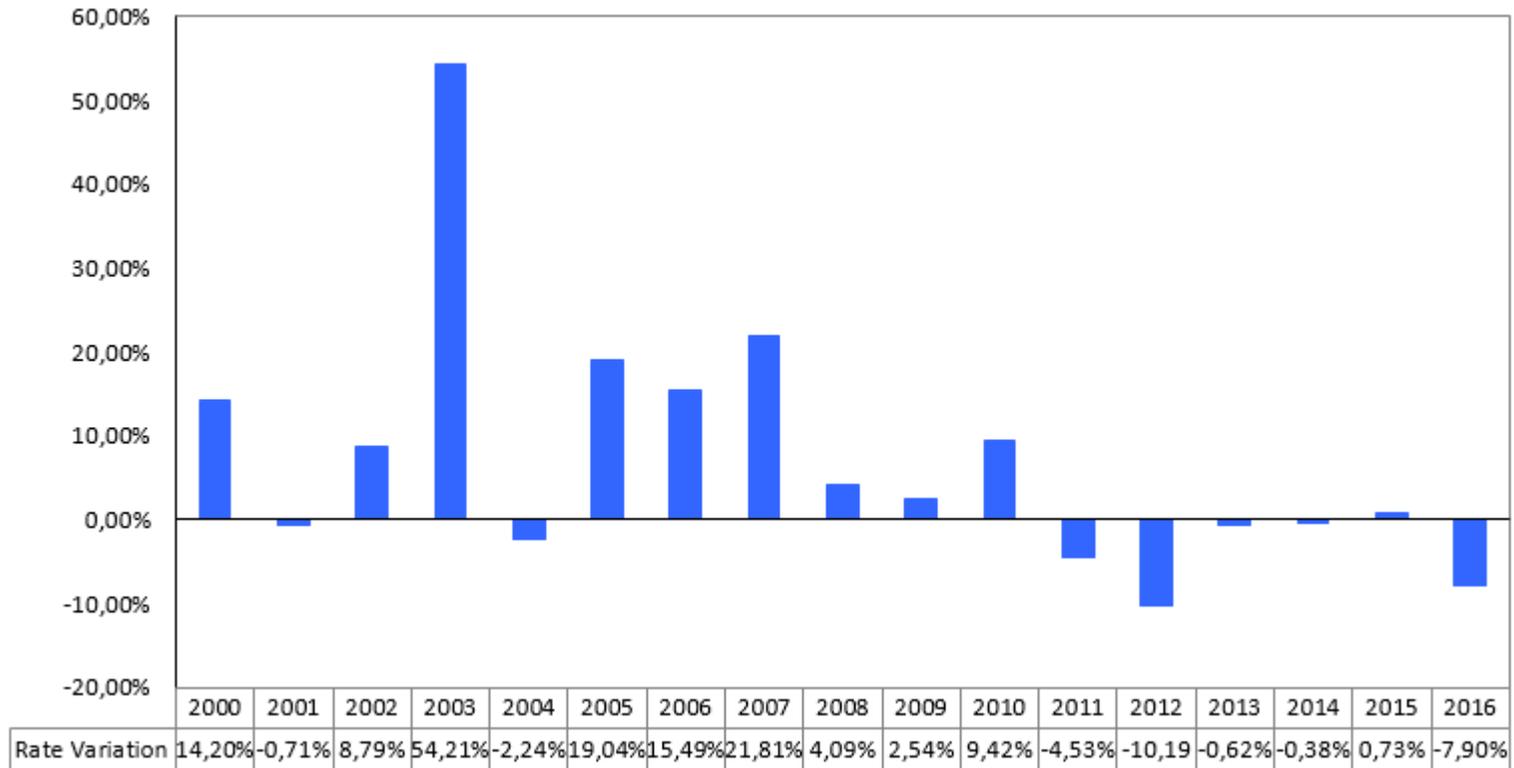
Source: INE and own compilation

■ R&D internal expenditure by sectors of performance in Andalusia and Spain (thousand €). 2016



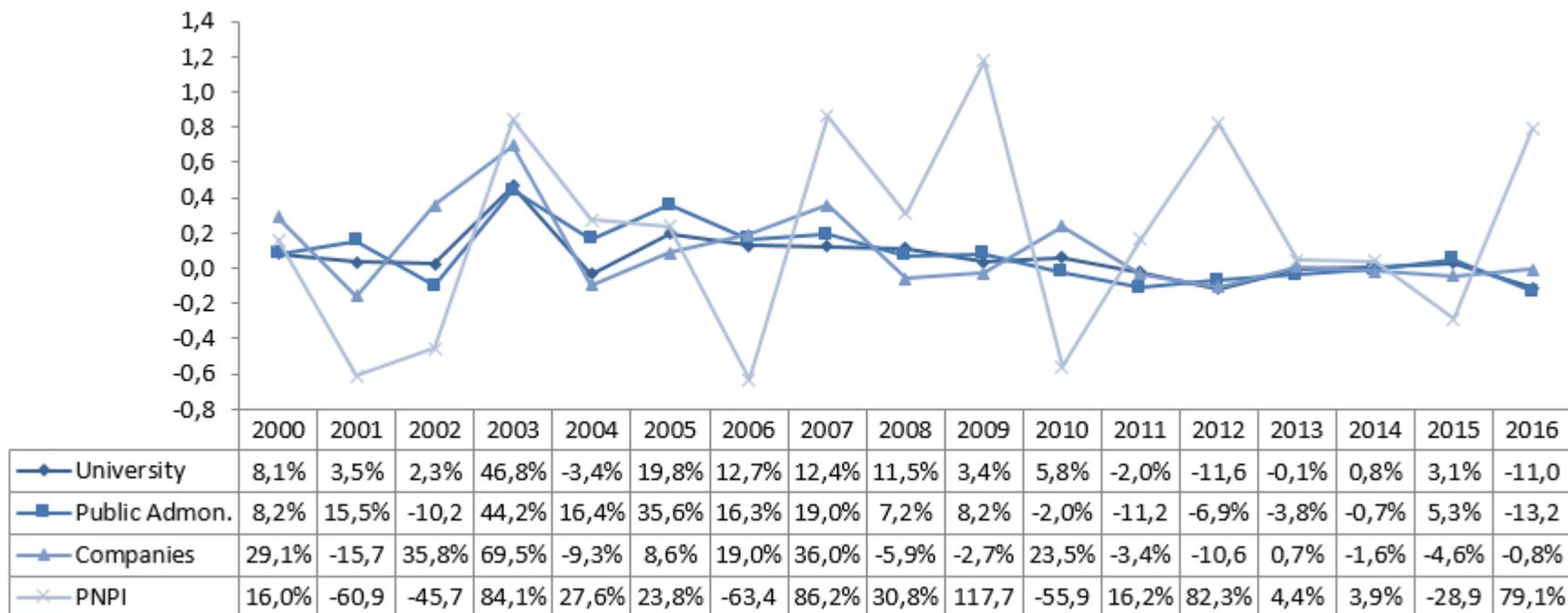
Note: PNPI - Privates non-profit institutions
 Source: INE and own compilation

■ **Inter-annual variation rate of R&D expenditure. 2000-2016**



Source: INE and own compilation

■ Inter-annual variation rate of R&D expenditure by sectors of performance. 2000-2016



Source: INE and own compilation

HUMAN RESOURCES

■ R&D personnel (FTE) employed by sectors of performance. 1997-2016

YEAR	UNIVERSITY		PUBLIC ADMIN.		COMPANIES		PNPI		TOTAL	PUBLIC SECTOR / PRIVATE SECTOR
	No.	%	No.	%	No.	%	No.	%		
1997	6.000,70	61,4%	2.233,50	22,9%	1.507,10	15,4%	26,10	0,3%	9.767,40	5,37
1998	6.522,80	59,6%	2.263,10	20,7%	2.128,50	19,4%	29,10	0,3%	10.943,50	4,07
1999	7.311,3	60,9%	2.758,4	23,0%	1.898,3	15,8%	34,3	0,3%	12.002,30	5,21
2000	7.146,90	53,1%	2.673,80	19,9%	3.576,10	26,6%	60,20	0,4%	13.457,00	2,70
2001	9.081,20	61,4%	3.058,20	20,7%	2.616,70	17,7%	29,20	0,2%	14.785,30	4,59
2002	8.129,80	58,1%	2.805,40	20,0%	3.064,60	21,9%	3,30	0,0%	14.003,10	3,56
2003	8.063,00	48,4%	3.547,50	21,3%	5.034,10	30,2%	15,80	0,1%	16.660,40	2,30
2004	9.129,40	53,5%	3.558,50	20,9%	4.369,20	25,6%	0,00	0,0%	17.057,10	2,90
2005	9.803,60	52,1%	4.103,30	21,8%	4.896,30	26,0%	0,00	0,0%	18.803,20	2,84
2006	10.162,60	48,4%	4.859,50	23,1%	5.986,70	28,5%	0,00	0,0%	21.008,80	2,51
2007	10.805,50	48,9%	5.527,50	25,0%	5.769,60	26,1%	0,00	0,0%	22.102,60	2,83
2008	11.206,90	48,2%	5.683,00	24,5%	6.337,30	27,3%	0,00	0,0%	23.227,20	2,67
2009	11.679,10	47,2%	6.099,00	24,6%	6.988,60	28,2%	0,00	0,0%	24.766,70	2,54
2010	12.179,50	47,3%	6.141,80	23,8%	7.452,70	28,9%	0,00	0,0%	25.774,00	2,46
2011	12.268,50	48,2%	5.678,70	22,3%	7.461,30	29,3%	25,00	0,1%	25.433,50	2,40
2012	11.945,90	48,5%	5.407,90	21,9%	7.238,00	29,4%	55,40	0,2%	24.647,20	2,38
2013	11.210,40	46,4%	5.222,90	21,6%	7.650,30	31,7%	55,50	0,2%	24.139,10	2,13
2014	10.724,20	45,4%	5.180,00	21,9%	7.676,60	32,5%	51,70	0,2%	23.632,50	2,06
2015	10.919,20	46,4%	5.562,60	23,7%	6.979,80	29,7%	57,50	0,2%	23.519,10	2,34
2016	10.534,60	45,6%	5.519,00	23,9%	6.985,80	30,2%	81,80	0,4%	23.121,20	2,27

Note: Between 2004 and 2010 PNPI data are included in the company sector

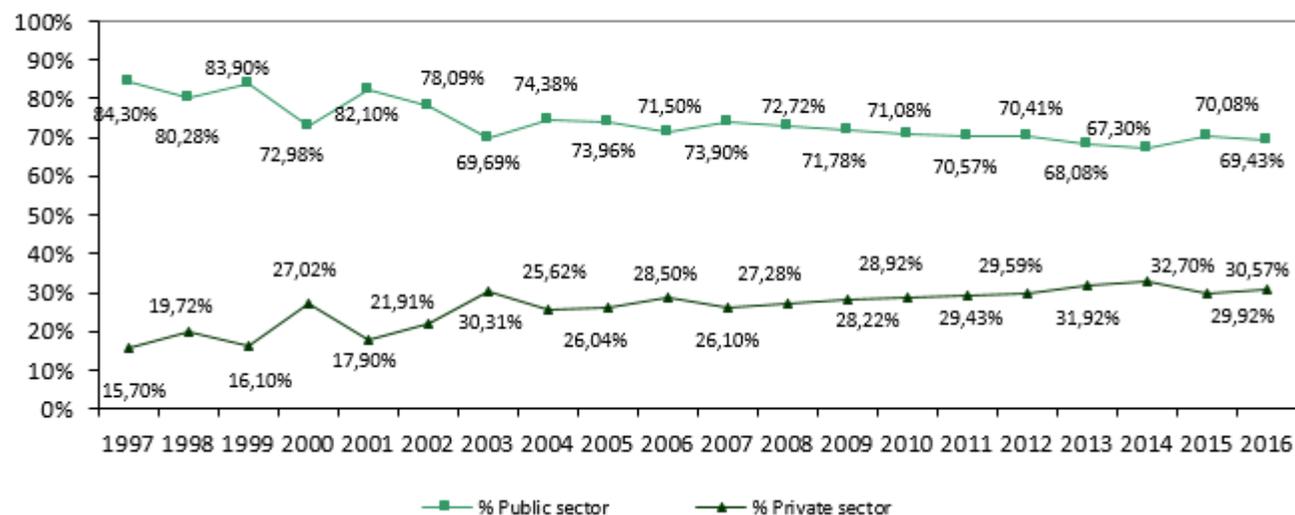
Source: INE and own compilation

■ **R&D personnel (FTE) employed by public and private sectors. 1997-2016**

YEAR	No. Public sector	No. Private sector	No. TOTAL	% Public sector	% Private sector
1997	8.234,20	1.533,20	9.767,40	84,30%	15,70%
1998	8.785,90	2.157,60	10.943,50	80,28%	19,72%
1999	10.069,70	1.932,60	12.002,30	83,90%	16,10%
2000	9.820,70	3.636,30	13.457,00	72,98%	27,02%
2001	12.139,40	2.645,90	14.785,30	82,10%	17,90%
2002	10.939,20	3.069,10	14.008,30	78,09%	21,91%
2003	11.610,50	5.049,90	16.660,40	69,69%	30,31%
2004	12.687,90	4.369,20	17.057,10	74,38%	25,62%
2005	13.906,90	4.896,30	18.803,20	73,96%	26,04%
2006	15.022,10	5.986,70	21.008,80	71,50%	28,50%
2007	16.333,00	5.769,60	22.102,60	73,90%	26,10%
2008	16.889,90	6.337,30	23.227,20	72,72%	27,28%
2009	17.778,10	6.988,60	24.766,70	71,78%	28,22%
2010	18.321,30	7.452,70	25.774,00	71,08%	28,92%
2011	17.947,20	7.486,30	25.433,50	70,57%	29,43%
2012	17.353,80	7.293,40	24.647,20	70,41%	29,59%
2013	16.433,30	7.705,80	24.139,10	68,08%	31,92%
2014	15.904,20	7.728,30	23.632,50	67,30%	32,70%
2015	16.481,80	7.037,30	23.519,10	70,08%	29,92%
2016	16.053,60	7.067,60	23.121,20	69,43%	30,57%

Source: INE and own compilation

■ **R&D personnel (FTE) percentage employed by public and private sectors. 1997-2016**



Source: INE and own compilation

■ R&D personnel (FTE) by sector of employment and occupation. 1997-2016

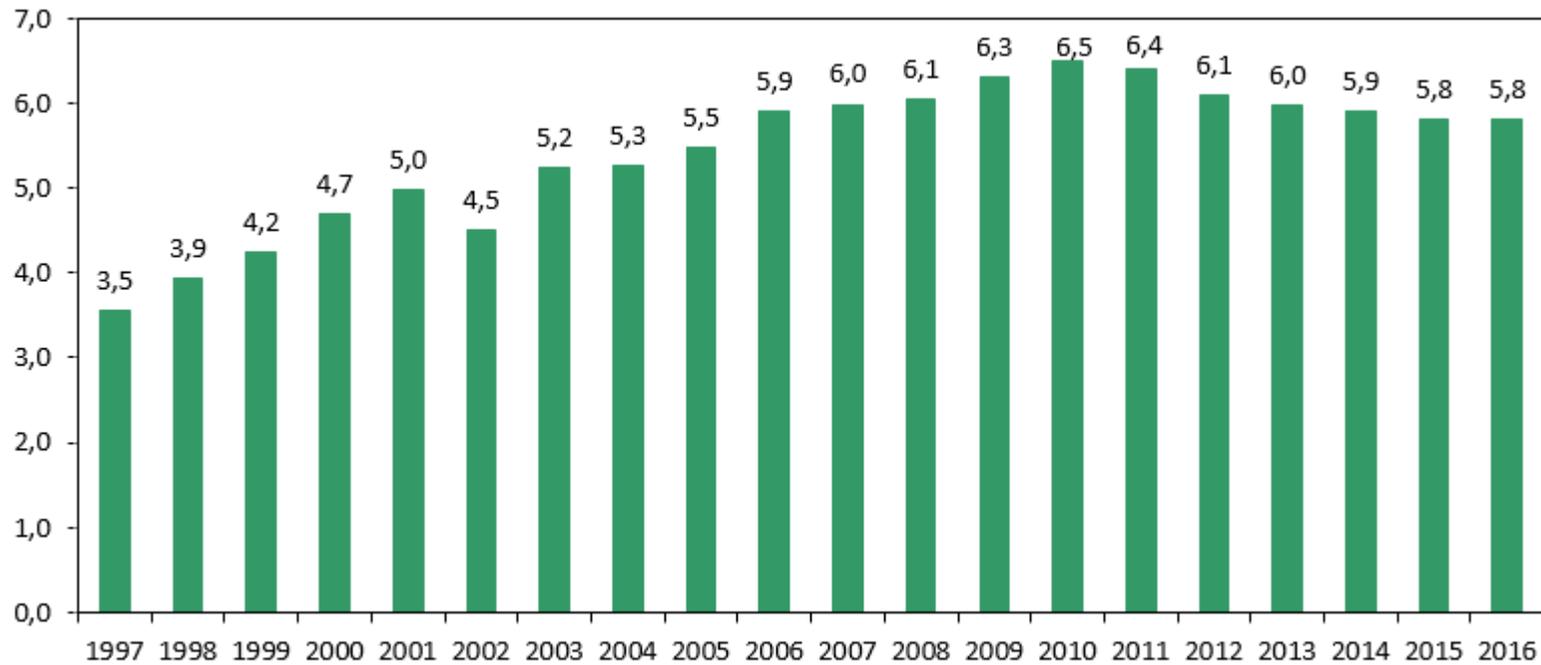
YEAR	No. Researchers	No. Technicians and Assistants	TOTAL	(Technician and Assistant) / Researcher
1997	6.690,20	3.077,20	9.767,40	0,46
1998	7.633,60	3.309,90	10.943,50	0,43
1999	8.660,30	3.342,00	12.002,30	0,39
2000	9.209,80	4.247,20	13.457,00	0,46
2001	10.816,60	3.968,70	14.785,30	0,37
2002	n.a.	n.a.	14.008,30	-
2003	11.089,70	5.570,70	16.660,40	0,50
2004	11.997,90	5.059,20	17.057,10	0,42
2005	13.218,50	5.584,70	18.803,20	0,42
2006	12.623,80	8.385,00	21.008,80	0,66
2007	13.232,50	8.870,10	22.102,60	0,67
2008	13.776,90	9.450,30	23.227,20	0,69
2009	14.665,90	10.100,80	24.766,70	0,69
2010	15.064,00	10.710,00	25.774,00	0,71
2011	14.609,30	10.824,20	25.433,50	0,74
2012	14.280,20	10.367,00	24.647,20	0,73
2013	13.868,10	10.271,00	24.139,10	0,74
2014	13.317,90	10.314,60	23.632,50	0,77
2015	13.507,00	10.012,10	23.519,10	0,74
2016	13.208,90	9.912,30	23.121,20	0,75

Note: n.a.: not available

-: numerical information not applicable

Source: INE and own compilation

■ Personnel employed in R&D (per thousand to active population). 1997-2016



Source: INE and own compilation

■ Inter-annual variation rate of R&D personnel (FTE). 1997-2016

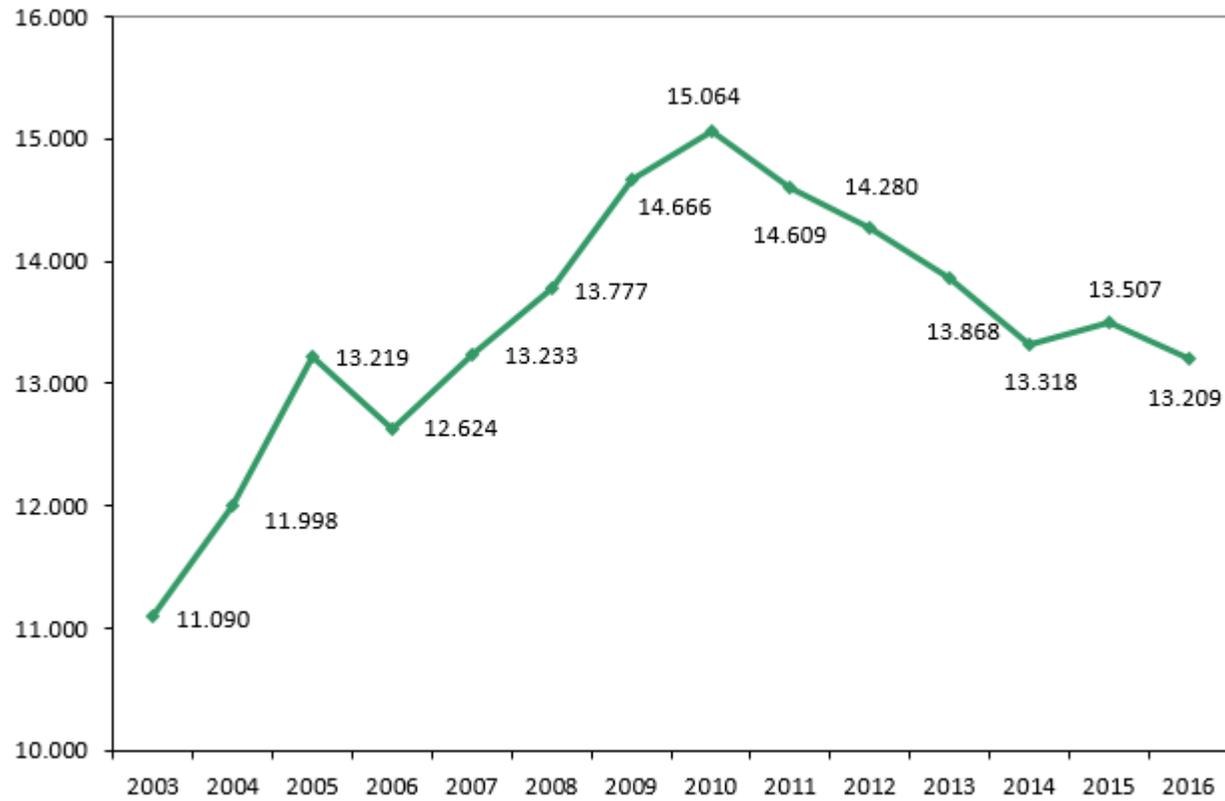
AÑO	Nº Investigadores	Nº Técnicos y auxiliares	TOTAL	Tasa de Variación Personal Investigador	Tasa de Variación Personal Técnico y auxiliar	Tasa de Variación Personal Total
1997	6.690,20	3.077,20	9.767,40	-	-	-
1998	7.633,60	3.309,90	10.943,50	14,10%	7,56%	12,04%
1999	8.660,30	3.342,00	12.002,30	13,45%	0,97%	9,68%
2000	9.209,80	4.247,20	13.457,00	6,35%	27,09%	12,12%
2001	10.816,60	3.968,70	14.785,30	17,45%	-6,56%	9,87%
2002	n.d.	n.d.	14.008,30	n.d.	n.d.	-5,26%
2003	11.089,70	5.570,70	16.660,40	-	-	-
2004	11.997,90	5.059,20	17.057,10	8,19%	-9,18%	2,38%
2005	13.218,50	5.584,70	18.803,20	10,17%	10,39%	10,24%
2006	12.623,80	8.385,00	21.008,80	-4,50%	50,14%	11,73%
2007	13.232,50	8.870,10	22.102,60	4,82%	5,79%	5,21%
2008	13.776,90	9.450,30	23.227,20	4,11%	6,54%	5,09%
2009	14.665,90	10.100,80	24.766,70	6,45%	6,88%	6,63%
2010	15.064,00	10.710,00	25.774,00	2,71%	6,03%	4,07%
2011	14.609,30	10.824,20	25.433,50	-3,02%	1,07%	-1,32%
2012	14.280,20	10.367,00	24.647,20	-2,25%	-4,22%	-3,09%
2013	13.868,10	10.271,00	24.139,10	-2,89%	-0,93%	-2,06%
2014	13.317,90	10.314,60	23.632,50	-3,97%	0,42%	-2,10%
2015	13.507,00	10.012,10	23.519,10	1,42%	-2,93%	-0,48%
2016	13.208,90	9.912,30	23.121,20	-2,21%	-1,00%	-1,69%

Note: n.a.: not available

-: numerical information not applicable

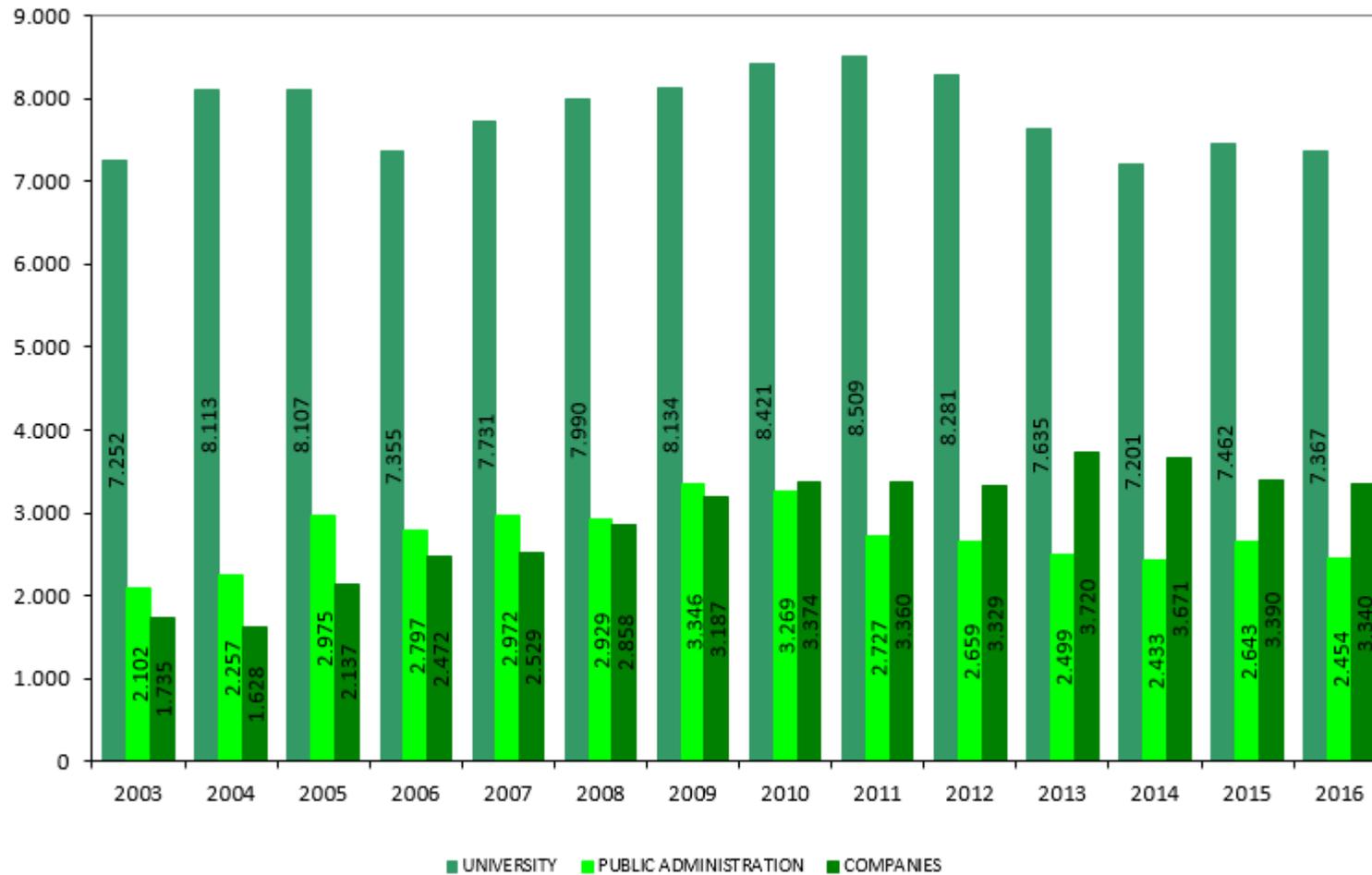
Source: INE and own compilation

■ R&D researchers (FTE). 2003-2016



Source: INE and own compilation

■ **R&D researchers (FTE) by sectors of performance. 2003-2016**



Source: INE and own compilation

■ **Andalusian Universities teaching staff by gender. 1998-2016**

Academic course	No. Teaching body of the Universities		
	Men	Women	TOTAL
Course 1998-1999	10.099	4.629	14.728
Course 1999-2000	10.701	5.048	15.749
Course 2000-2001	11.192	5.453	16.645
Course 2001-2002	10.351	5.072	15.423
Course 2002-2003	10.414	5.119	15.533
Course 2003-2004	10.480	5.235	15.715
Course 2004-2005	10.698	5.405	16.103
Course 2005-2006	10.831	5.569	16.400
Course 2006-2007	11.181	5.848	17.029
Course 2007-2008	11.461	6.152	17.613
Course 2008-2009	11.683	6.367	18.050
Course 2009-2010	12.117	6.913	19.030
Course 2010-2011	12.199	7.231	19.430
Course 2011-2012	11.499	6.632	18.131
Course 2012-2013	10.962	6.441	17.403
Course 2013-2014	10.714	6.440	17.154
Course 2014-2015	10.537	6.411	16.948
Course 2015-2016	10.555	6.574	17.129

Source: MECS and own compilation

■ Andalusian Universities professors by gender. 2004-2016

Academic course	No. University Professors			No. University College Professors			TOTAL PROFESSOR (No.)			TOTAL PROFESSOR (%)	
	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women
Course 2004-2005	1.249	167	1.416	368	168	536	1.617	335	1.952	82,84%	17,16%
Course 2005-2006	1.244	166	1.410	362	166	528	1.606	332	1.938	82,87%	17,13%
Course 2006-2007	1.199	166	1.365	344	162	506	1.543	328	1.871	82,47%	17,53%
Course 2007-2008	1.251	178	1.429	300	139	439	1.551	317	1.868	83,03%	16,97%
Course 2008-2009	1.251	186	1.437	271	128	399	1.522	314	1.836	82,90%	17,10%
Course 2009-2010	1.430	272	1.702	249	114	363	1.679	386	2.065	81,31%	18,69%
Course 2010-2011	1.533	321	1.854	224	107	331	1.757	428	2.185	80,41%	19,59%
Course 2011-2012	1.596	359	1.955	301	95	396	1.897	454	2.351	80,69%	19,31%
Course 2012-2013	1.675	401	2.076	191	88	279	1.866	489	2.355	79,24%	20,76%
Course 2013-2014	1.612	397	2.009	169	82	251	1.781	479	2.260	78,81%	21,19%
Course 2014-2015	1.570	395	1.965	162	79	241	1.732	474	2.206	78,51%	21,49%
Course 2015-2016	1.545	400	1.945	145	77	222	1.690	477	2.167	77,99%	22,01%

Source: MECS and own compilation

■ **Andalusian Universities student body by gender. 1998-2016**

Academic course	No. Student body of the Universities		
	Men	Women	TOTAL
Course 1998-1999	124.593	143.261	267.854
Course 1999-2000	127.294	145.812	273.106
Course 2000-2001	121.846	143.611	265.457
Course 2001-2002	117.883	138.892	256.775
Course 2002-2003	114.119	134.468	248.587
Course 2003-2004	109.782	130.943	240.725
Course 2004-2005	106.194	127.159	233.353
Course 2005-2006	104.234	126.387	230.621
Course 2006-2007	102.535	124.964	227.499
Course 2007-2008	101.878	124.794	226.672
Course 2008-2009	101.750	124.361	226.111
Course 2009-2010	104.326	126.391	230.717
Course 2010-2011	106.873	127.978	234.851
Course 2011-2012	107.765	130.785	238.550
Course 2012-2013	107.170	129.542	236.712
Course 2013-2014	105.646	127.048	232.694
Course 2014-2015	102.127	122.443	224.570
Course 2015-2016	97.711	117.652	215.363

Note: From the academic course 2008-2009 onwards, besides the students registered in 1st and 2nd cycles, the Degree are assessed.
 Source: MECS and own compilation

■ **Andalusian Universities graduates by gender. 1998-2016**

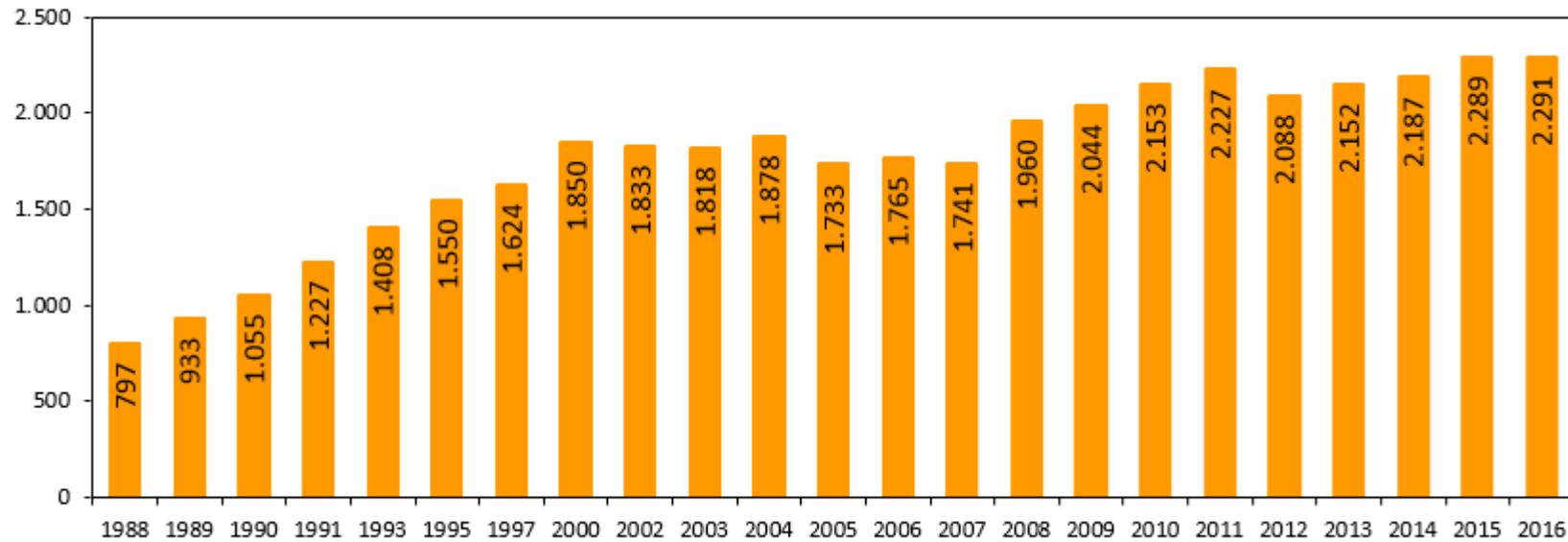
Academic course	No. Student body who finished studies of the Universities		
	Men	Women	TOTAL
Course 1998-1999	13.357	21.035	34.392
Course 1999-2000	13.683	20.342	34.025
Course 2000-2001	12.242	18.767	31.009
Course 2001-2002	14.024	20.598	34.622
Course 2002-2003	14.112	20.766	34.878
Course 2003-2004	13.711	20.387	34.098
Course 2004-2005	13.110	19.793	32.903
Course 2005-2006	12.143	18.803	30.946
Course 2006-2007	11.261	18.201	29.462
Course 2007-2008	11.304	18.436	29.740
Course 2008-2009	11.788	19.676	31.464
Course 2009-2010	12.294	20.083	32.377
Course 2010-2011	13.072	20.913	33.985
Course 2011-2012	13.980	20.819	34.799
Course 2012-2013	12.927	18.650	31.577
Course 2013-2014	13.980	21.469	35.449
Course 2014-2015	15.182	22.315	37.497
Course 2015-2016	13.346	19.843	33.189

Note: From the academic course 2010-2011 onwards, besides the students who finished 1st and 2nd cycles, the Degree are assessed.

Source: MECS and own compilation.

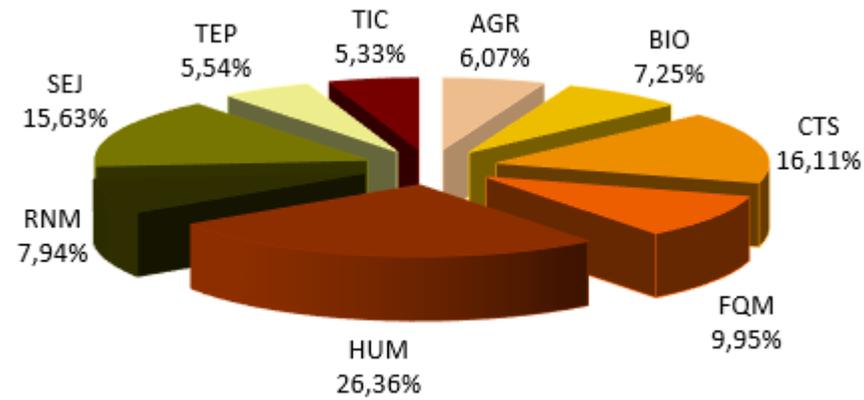
PAIDI ACTIONS

■ Number of R&D Groups. 1988-2016



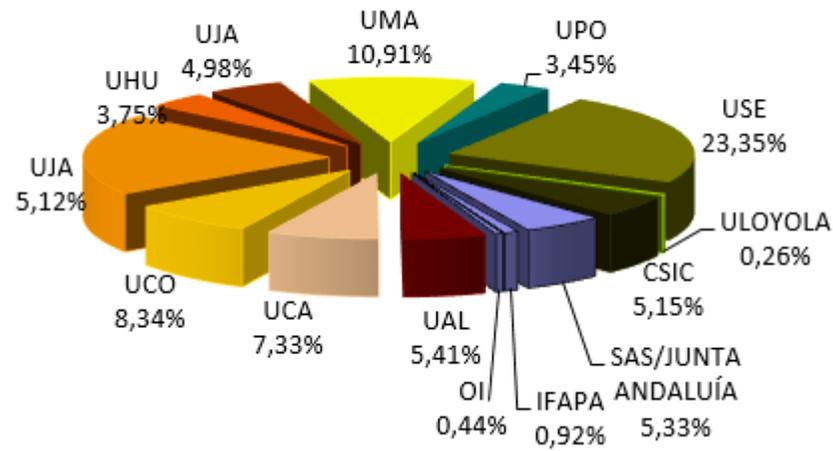
Source: DGITC, SICA and own compilation

■ **Distribution of R&D Groups by scientific-technical areas of PAIDI. 2016**



Source: DGITC, SICA and own compilation

■ **Distribution of R&D Groups by institutions. 2016**



Source: DGITC, SICA and own compilation

■ Funding granted to R&D Groups by institutions (€). 2002-2011

INSTITUTIONS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
University of Almeria	574.069,00	452.448,56	502.425,39	619.150,44	668.555,22	696.925,37	629.398,85	661.002,85	300.216,55	272.339,36
University of Cadiz	865.177,00	575.407,98	656.659,30	806.502,62	869.116,42	865.594,40	919.908,75	911.486,79	407.329,63	368.037,04
University of Cordoba	1.133.300,81	974.953,81	1.024.989,30	1.208.734,06	1.286.223,64	1.289.410,62	1.245.069,33	1.192.077,60	529.519,44	482.411,43
University of Granada	3.068.079,35	2.237.042,62	2.288.745,44	2.775.430,33	3.023.693,48	3.162.299,45	3.233.516,94	3.475.495,24	1.455.058,07	1.313.873,51
University of Huelva	366.724,40	276.567,28	299.706,55	386.517,96	469.583,41	462.845,45	424.900,61	503.127,88	211.870,45	193.941,33
University of Jaen	544.313,15	440.459,52	431.870,94	574.465,42	598.103,13	646.184,94	583.097,18	716.131,50	296.166,86	261.763,43
University of Malaga	1.661.131,85	1.028.570,10	1.009.927,99	1.276.953,45	1.369.770,66	1.341.001,35	1.434.083,55	1.585.954,02	681.477,03	607.860,51
University of Sevilla	2.503.010,00	2.078.675,99	2.202.773,77	2.597.050,83	2.884.566,78	3.075.762,51	2.650.835,82	2.849.946,33	1.283.103,31	1.176.075,74
University of Pablo de Olavide	380.194,00	179.733,60	203.642,76	261.961,74	360.768,73	474.983,75	657.871,75	542.581,01	226.655,92	213.373,69
CSIC	1.601.615,00	896.019,19	927.115,70	1.019.255,69	1.128.825,48	1.247.829,43	1.091.257,47	1.066.285,05	479.657,49	444.892,41
SAS / Foundations	673.915,23	0,00	0,00	0,00	0,00	660.676,44	483.753,01	606.124,56	342.245,11	319.298,74
IFAPA	0,00	0,00	0,00	0,00	0,00	173.968,29	186.716,61	182.874,86	82.997,66	69.108,35
Others Institutions	0,00	361.777,22	437.776,19	550.204,45	861.823,76	8.981,92	0,00	0,00	5.411,49	2.622,41
TOTAL	13.371.529,79	9.501.655,87	9.985.633,33	12.076.226,99	13.521.030,71	14.106.463,92	13.540.409,87	14.293.087,68	6.301.709,01	5.725.597,95

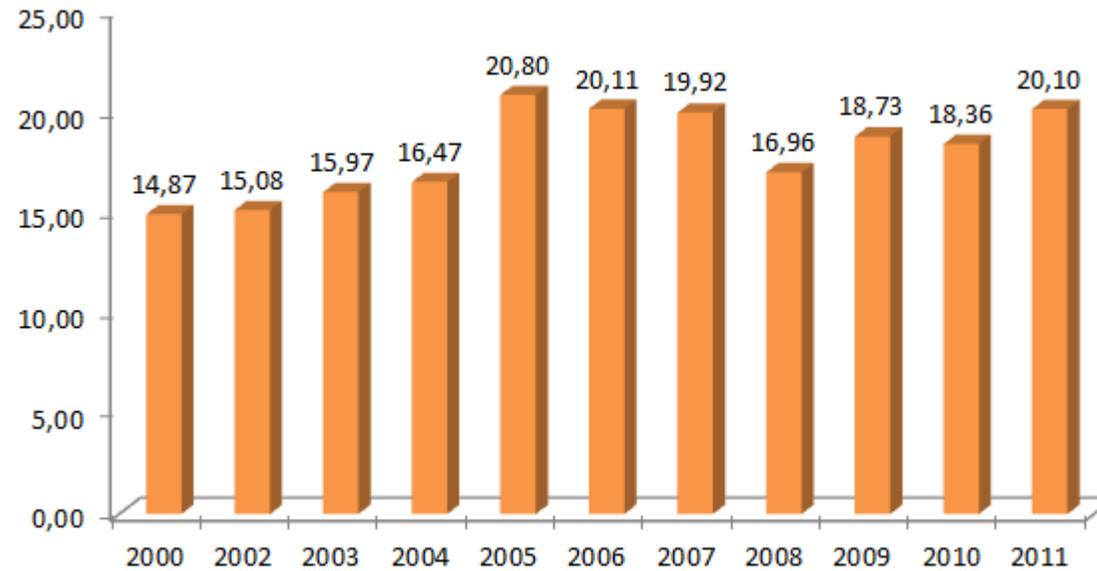
Note: Last available data corresponding to 2011
Source: DGITC and own compilation

■ Funding granted to R&D Groups by scientific-technical areas of PAIDI (€). 2002-2011

SCIENTIFIC-TECHNICAL AREAS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
AGR	1.341.885,00	917.622,85	1.009.815,91	1.150.465,44	1.362.790,97	1.302.260,09	1.200.810,51	1.191.713,87	508.966,99	458.658,60
BIO	1.352.607,55	885.036,52	1.036.538,80	1.177.641,11	1.312.664,94	1.340.780,32	1.269.635,94	1.246.884,53	569.463,69	544.769,40
CTS	1.993.448,23	1.379.523,56	1.424.041,64	1.837.258,43	2.054.983,57	2.210.378,55	2.093.354,37	2.151.433,23	1.058.502,91	932.801,82
FQM	2.254.357,00	1.534.407,49	1.582.424,96	2.235.528,70	2.378.454,17	2.632.184,76	2.329.171,00	2.163.367,32	948.709,70	855.271,42
HUM	1.886.502,01	1.603.301,18	1.585.761,64	1.694.253,42	1.926.139,70	1.731.562,28	1.942.706,66	2.481.166,63	983.491,19	912.062,93
RNM	1.549.614,00	977.307,58	1.102.647,97	1.302.589,49	1.406.181,63	1.608.126,40	1.533.589,38	1.563.834,56	681.279,62	596.374,86
SEJ	1.109.400,00	980.825,58	951.947,02	1.189.595,62	1.337.256,12	1.380.455,40	1.186.263,25	1.512.983,17	631.006,93	595.717,32
TEP	999.310,00	487.958,95	527.077,38	640.971,78	723.314,10	844.354,80	887.657,11	850.680,46	370.524,79	334.450,73
TIC	884.106,00	735.672,16	765.378,01	847.923,00	1.019.245,51	1.056.361,32	1.097.221,65	1.131.023,91	549.763,19	495.490,87
TOTAL	13.371.229,79	9.501.655,87	9.985.633,33	12.076.226,99	13.521.030,71	14.106.463,92	13.540.409,87	14.293.087,68	6.301.709,01	5.725.597,95

Note: Last available data corresponding to 2011
 Source: DGITC and own compilation

■ R&D Groups average assessment. 2000-2011



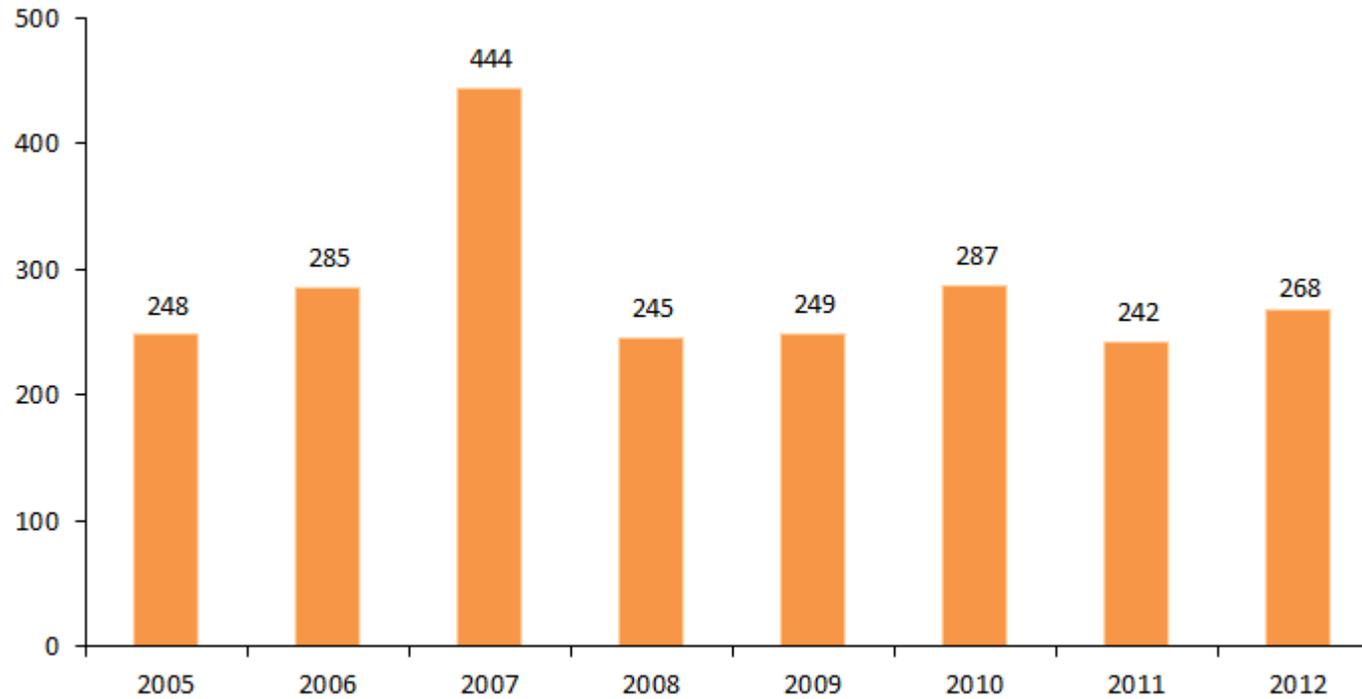
Note: Last available data corresponding to 2011
Source: DGITC and own compilation

■ R&D personnel by academic qualification. 1997-2016

Year	PERSONAL I+D				TOTAL personal
	Doctors	Upper studies	Medium studies	Auxiliary personnel	
1997	8.202	6.543	447	841	16.033
2000	10.212	7.192	519	951	18.874
2002	11.158	5.780	261	460	17.659
2003	11.135	7.190	511	701	19.537
2004	12.056	7.859	595	741	21.251
2005	11.932	6.327	291	768	19.318
2006	12.117	6.128	295	734	19.274
2007	13.275	7.500	526	528	21.829
2008	14.073	7.959	558	539	23.129
2009	15.208	8.776	621	492	25.097
2010	16.305	9.463	691	843	27.302
2011	18.848	8.696	69	3.046	30.659
2012	16.444	8.501	177	2.251	27.373
2013	16.839	8.728	188	2.282	28.037
2014	17.087	8.921	199	2.309	28.516
2015	17.763	9.205	213	2.347	29.528
2016	18.002	8.818	206	2.140	29.166

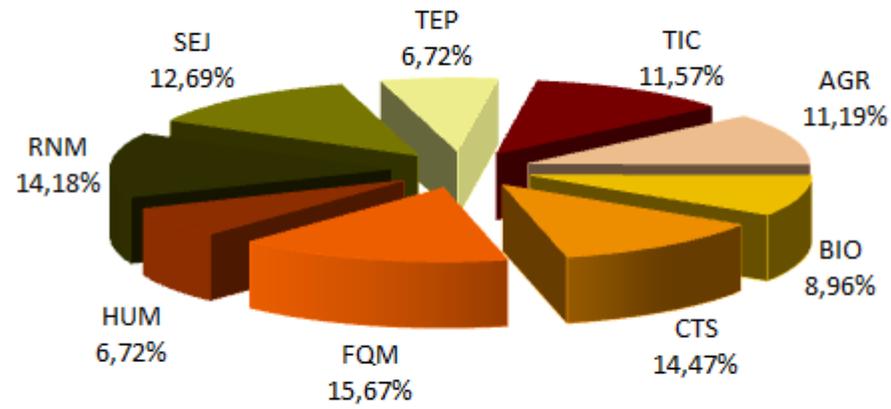
Note: Last available data corresponding to 2011
 Source: DGITC and own compilation

■ **Number of Excellence Projects. 2005-2012**



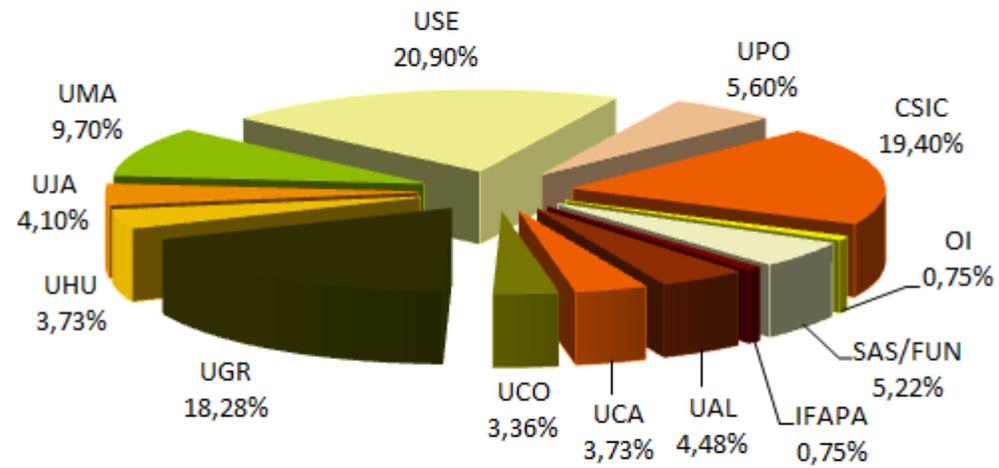
Note: Last call resolved for the year 2012
Source: DGITC and own compilation

■ **Distribution of Excellence Projects by scientific-technical areas of PAIDI. 2012**



Note: Last call resolved for the year 2012
Source: DGITC and own compilation

■ **Distribution of Excellence Projects by institutions. 2012**



Note: Last call resolved for the year 2012
 Source: DGITC and own compilation

■ Funding granted to Excellence Projects by institutions (€). 2005-2012

INSTITUTIONS	2005	2006	2007	2008	2009	2010	2011	2012
University of Almeria	771.958,00	2.028.327,52	2.325.271,63	2.220.343,60	1.864.914,04	2.026.125,91	1.204.673,75	1.836.893,00
University of Cadiz	2.259.312,00	3.023.006,62	4.183.543,21	2.745.769,02	2.117.319,44	1.773.644,75	1.440.023,10	796.324,50
University of Cordoba	2.535.150,00	4.453.408,30	3.818.630,99	3.322.077,22	4.231.855,52	2.003.732,51	2.696.615,53	1.806.939,00
University of Granada	6.294.902,00	11.749.828,52	19.069.323,18	8.907.387,14	10.068.402,88	8.097.540,83	7.274.419,08	5.461.749,33
University of Huelva	961.900,00	354.730,00	2.600.794,46	1.039.835,73	1.218.581,40	1.337.369,00	468.699,58	1.062.848,00
University of Jaen	748.450,00	1.534.327,94	2.694.964,29	1.661.318,53	1.160.240,04	4.439.337,90	1.329.130,78	973.823,00
University of Malaga	2.882.545,00	4.041.741,80	10.402.008,26	4.569.637,51	4.436.609,84	3.761.102,19	4.914.776,32	3.729.939,00
University of Sevilla	7.847.718,00	9.840.328,34	11.907.384,17	9.777.509,46	9.168.907,36	7.562.545,57	8.314.722,54	8.199.132,35
University of Pablo de Olavide	1.482.872,00	1.716.690,60	4.937.344,62	1.336.287,36	2.525.587,44	1.329.255,44	1.109.563,70	1.782.439,00
CSIC	3.863.156,00	8.313.410,75	12.957.101,41	8.275.260,18	9.050.879,60	5.083.224,87	5.380.085,38	8.775.025,21
Other Institutions	705.267,00	1.654.647,23	2.840.752,94	730.829,56	0,00	1.047.882,00	428.963,05	190.169,00
SAS/Foundations	0,00	0,00	0,00	2.812.900,73	1.783.847,36	2.880.344,42	3.062.093,25	2.244.701,00
IFAPA	n.a.	n.a.	n.a.	n.a.	441.783,00	1.709.837,00	114.885,00	354.244,00
TOTAL	30.353.230,00	48.710.447,62	77.737.119,16	47.399.156,04	48.068.927,92	43.051.942,38	37.738.651,06	37.214.226,39

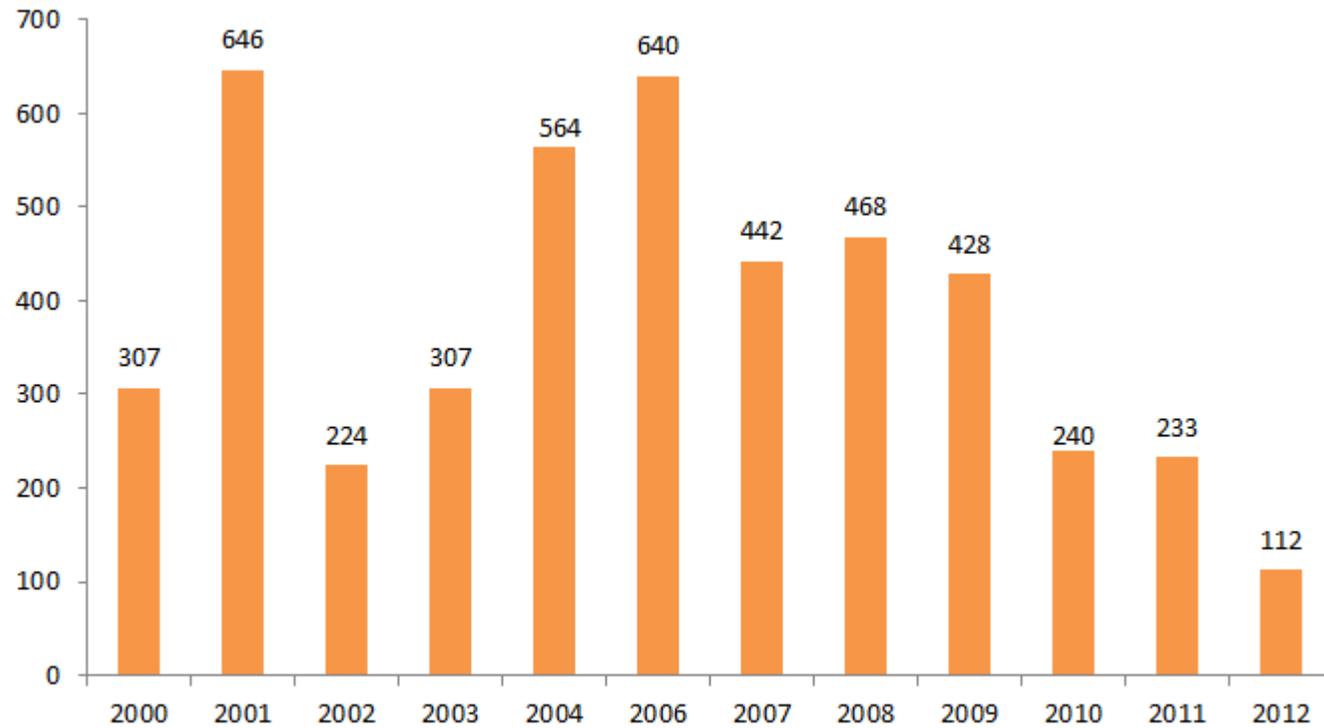
Note: n.a. - not available
 Source: DGITC and own compilation

■ Funding granted to Excellent Projects by scientific-technical areas of PAIDI (€). 2005-2012

SCIENTIFIC-TECHNICAL AREAS	2005	2006	2007	2008	2009	2010	2011	2012
AGR	4.593.606,00	4.180.605,11	7.248.845,50	4.868.936,80	4.592.983,16	9.785.538,70	3.321.860,50	4.977.184,10
BIO	2.986.513,00	6.066.462,92	13.505.805,97	6.010.774,55	4.679.353,48	4.730.614,60	5.452.496,33	4.246.813,00
CTS	2.507.335,00	7.079.825,61	3.450.847,38	7.242.145,59	6.561.750,16	8.043.026,26	6.602.822,50	6.011.584,00
FQM	5.151.440,00	10.438.355,58	13.918.536,01	6.837.230,64	9.139.105,44	4.707.665,42	4.323.933,75	6.144.746,25
HUM	2.470.343,00	4.199.770,08	8.576.414,63	2.159.975,86	2.589.933,80	864.761,44	1.752.675,16	1.971.490,13
RNM	4.924.149,00	6.490.876,92	7.867.614,99	5.934.029,25	7.801.449,60	5.053.624,39	5.932.664,89	4.702.896,16
SEJ	3.046.444,00	3.167.227,56	7.869.898,57	3.714.258,97	2.193.873,76	1.965.578,54	2.373.204,62	2.228.910,75
TEP	2.378.463,00	3.696.245,34	4.403.507,75	3.782.061,85	5.431.286,56	2.996.464,76	2.997.974,15	2.364.705,00
TIC	2.294.937,00	3.391.078,50	10.895.648,36	6.849.742,53	5.079.191,96	4.904.668,28	4.981.019,16	4.565.897,00
TOTAL	30.353.230,00	48.710.447,62	77.737.119,16	47.399.156,04	48.068.927,92	43.051.942,38	37.738.651,06	37.214.226,39

Note: Last call resolved for the year 2012
 Source: DGITC and own compilation

■ Number of incentives granted to enhance researchers mobility and improvement. 2000-2012



Note: The last available data are of 2012
Source: DGITC and own compilation

■ Percentage of female researchers recipients of R&D Groups and Excellence Projects incentives. 2005-2011

YEAR	No. women PRs Projects	No. women PRs Groups	No. Projects	No. Groups	% women PRs projects	% women PRs projects	% women PRs projects + Groups
2005	31	328	216	1.733	14,35%	18,93%	18,42%
2006	49	345	330	1.765	14,85%	19,55%	18,81%
2007	77	337	350	1.741	22,00%	19,36%	19,80%
2008	51	405	245	1.960	20,82%	20,66%	20,68%
2009	58	421	249	2.044	23,29%	20,60%	20,89%
2010	67	465	287	2.153	23,34%	21,60%	21,80%
2011	71	514	250	2.227	28,40%	23,08%	23,62%

Note: PRs - Principal Researchers
 Last available data corresponding to 2011
 Source: DGITC and own compilation

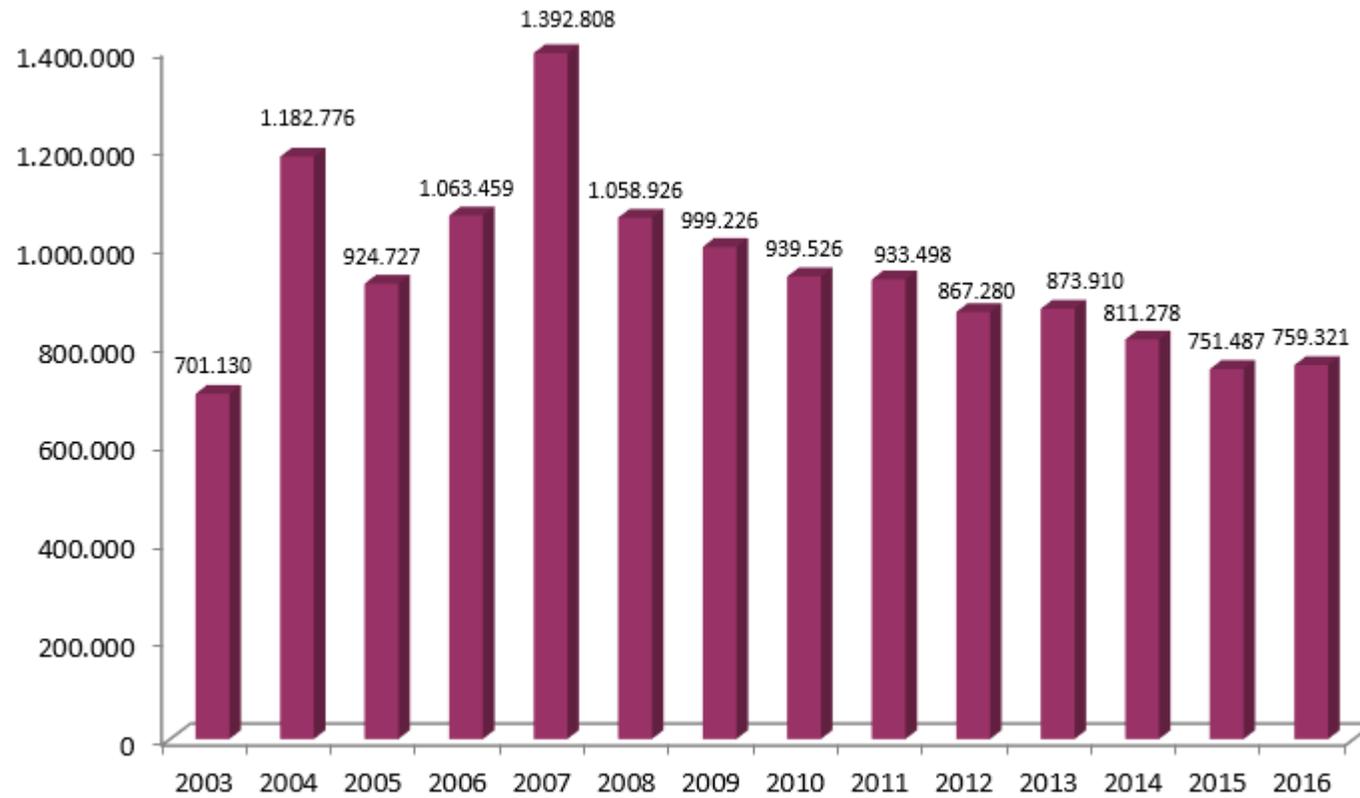
INNOVATION

■ Number of R&D performing companies by level of technology. 2002-2016

AÑO	Manufactureras de alta y media-alta tecnología	Servicios alta tecnología	TOTAL
2002	97	60	157
2003	138	82	220
2004	152	80	232
2005	186	124	310
2006	215	177	392
2007	203	251	454
2008	171	239	410
2009	154	276	430
2010	177	344	521
2011	159	336	495
2012	166	302	468
2013	163	292	455
2014	166	277	443
2015	151	255	406
2016	152	286	438

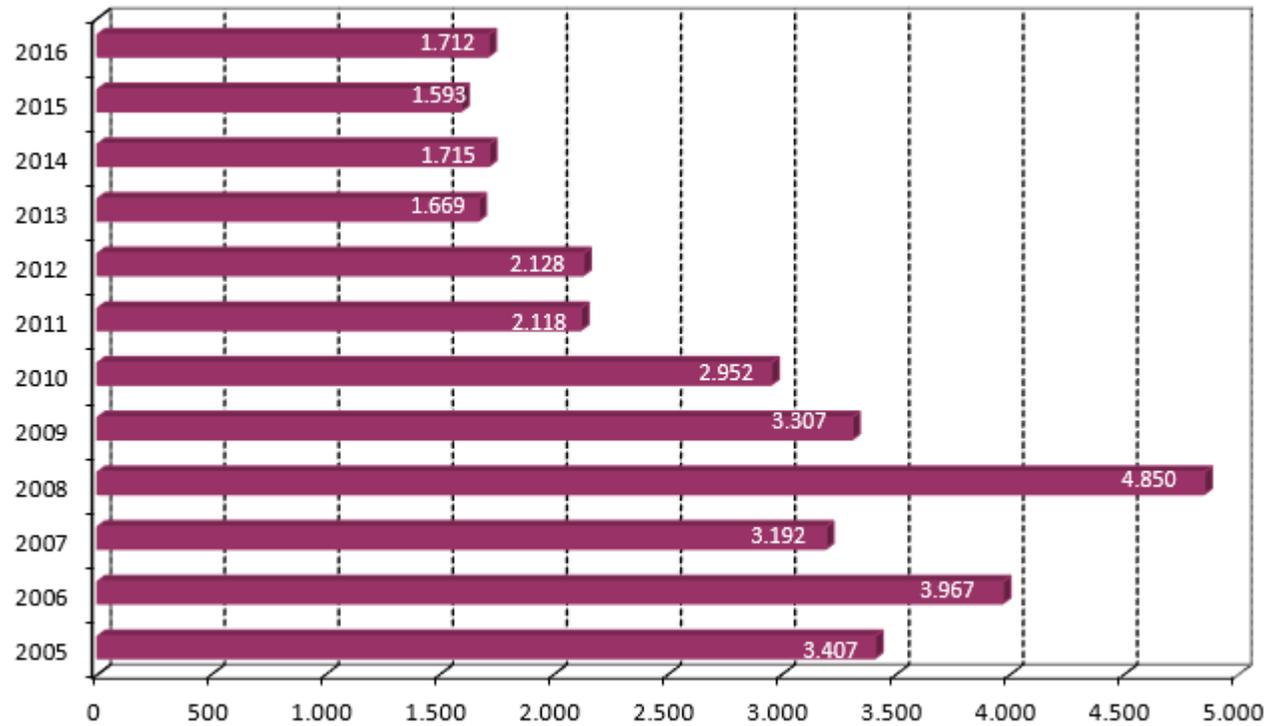
Source: INE and own compilation

■ **Total expenditure on innovative activities (thousand €). 2003-2016**



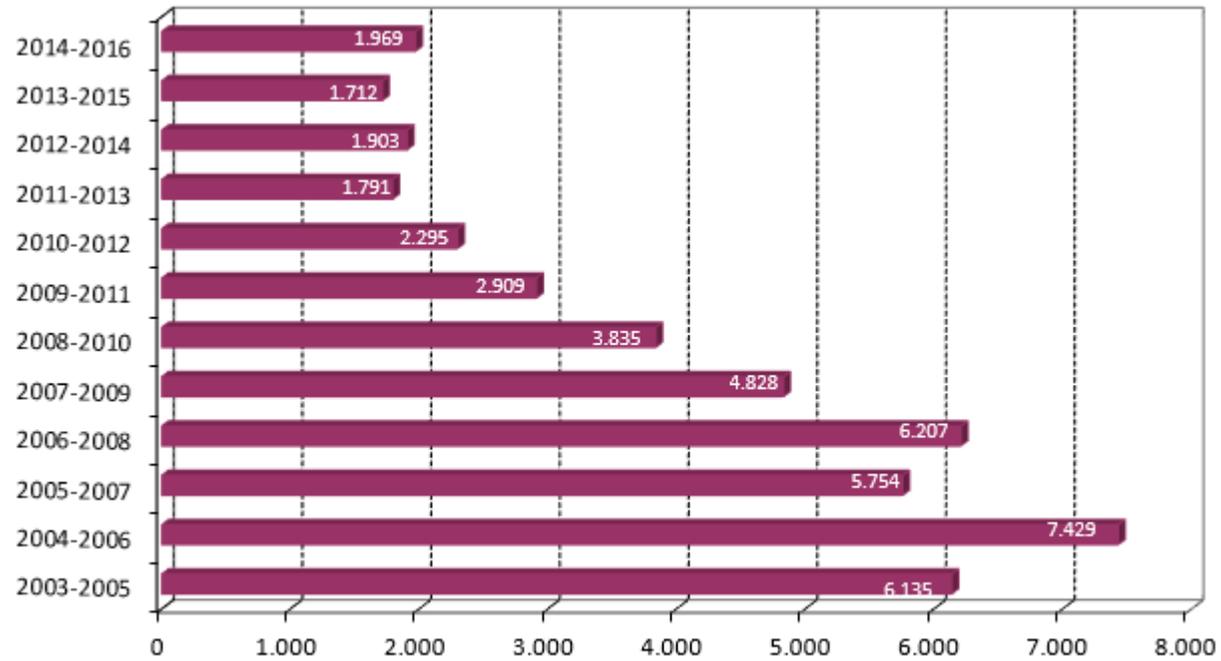
Source: INE and own compilation

■ Number of companies with innovative activities. 2005-2016



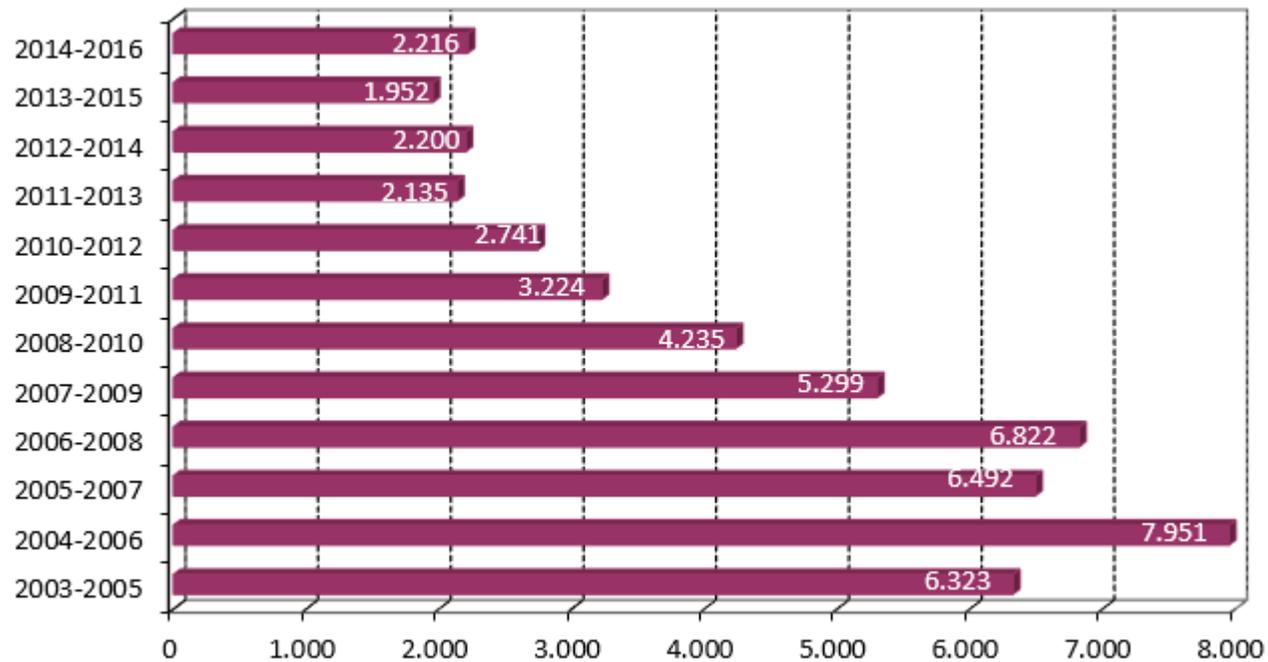
Source: INE and own compilation

■ Number of innovative companies. 2003-2016



Source: INE and own compilation

■ Number of EIN companies. 2003-2016



Note: EIN - Innovative businesses or companies with innovations underway or unsuccessful
Source: INE and own compilation

■ Intensity of innovation. 2005-2016

YEAR	INTENSITY
2005	0,59
2006	0,55
2007	0,72
2008	0,58
2009	0,69
2010	0,75
2011	0,65
2012	0,67
2013	0,74
2014	0,70
2015	0,57
2016	0,56

Note: Intensity of innovation = (Expenditure on innovative activities / Turnover) x 100
Source: INE and own compilation

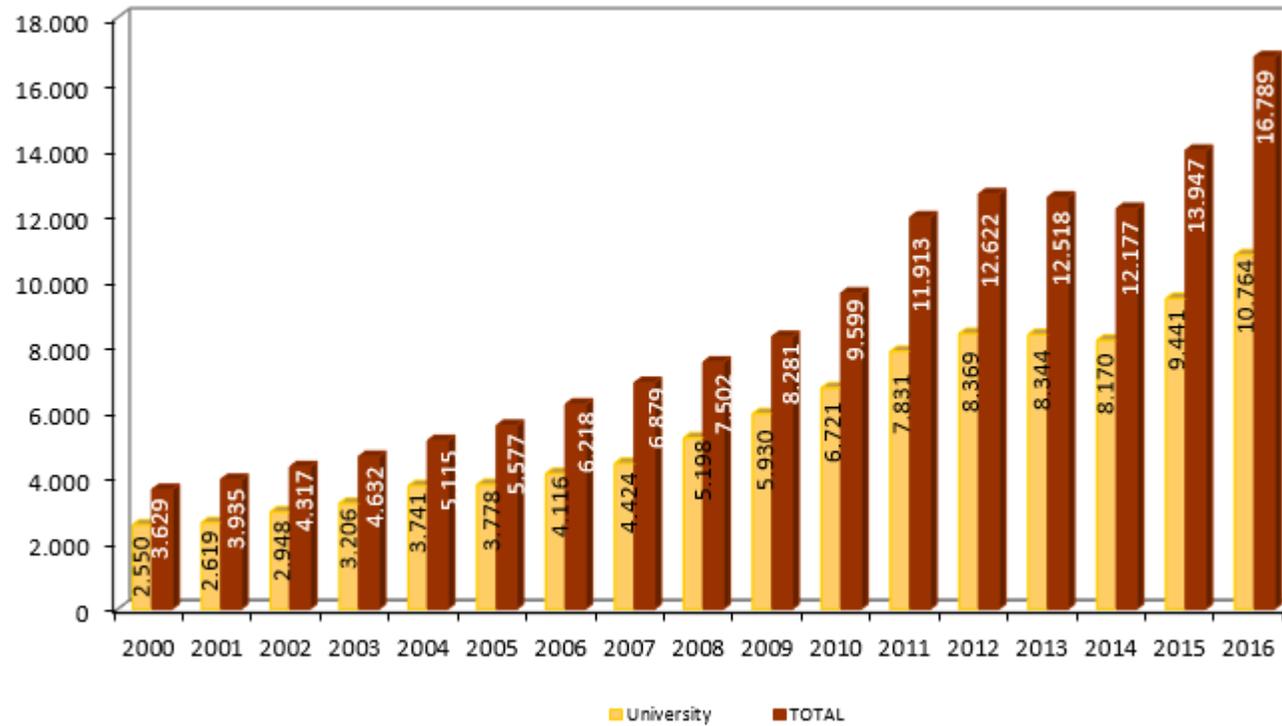
OUTPUTS

■ Number of patent applications and utility models. 1990-2016

YEAR	PATENTS			UTILITY MODELS	TOTAL
	NATIONAL ROUTE	EUROPEAN ROUTE	PCT ROUTE		
1990	131	3	1	153	288
1991	128	8	8	192	336
1992	148	5	1	201	355
1993	168	4	5	203	380
1994	177	7	13	183	380
1995	166	2	13	198	379
1996	184	4	16	177	381
1997	201	8	23	198	430
1998	175	7	19	192	393
1999	203	3	23	224	453
2000	229	9	17	247	502
2001	238	6	38	238	520
2002	273	5	38	231	547
2003	267	6	49	231	553
2004	273	7	56	204	540
2005	325	8	80	206	619
2006	334	9	93	198	634
2007	402	16	105	217	740
2008	433	16	120	226	795
2009	453	9	131	222	815
2010	454	16	180	233	883
2011	477	16	185	250	928
2012	436	16	195	310	957
2013	436	16	195	299	946
2014	527	20	207	309	1.063
2015	442	15	199	273	929
2016	512	26	141	269	948

Source: OEPM and own compilation

■ **Number of ISI documents. 2000-2016**



Source: Database of Institute for Scientific Information (ISI) and own compilation

■ Incentives granted to infrastructures, equipment and management by institutions. 2011

CATEGORY	No. institutions	No. projects	Investement granted
ACTA (Agent of Technological Knowledge Accredited)	1	1	100.476,27
CII (Centre and Institute of Research)	1	1	435.951,64
CIT (Innovation and Technology Centre)	4	4	1.900.613,16
CT (Technology Centre)	7	7	2.888.773,24
CTA (Advanced Technology Centre)	1	1	1.480.000,00
DCT (Space of Scientific-Technological Dissemination)	0	0	0,00
ETC (Knowledge Transfer Entity)	1	1	415.740,00
OPI (Public Research Body)	5	14	5.317.911,04
PCT (Scientific and Technological Park)	6	7	9.863.585,70
University	8	52	19.948.557,85
TOTAL	34	88	42.351.608,90

Source: DGITC and own compilation

Note: Last available data corresponding to 2011

■ **Summons of the National Plan of R&D&I by participation modality. 2013-2016**

ESTATE R&D&I PLAN 2013-2016		
Modality of Participation	2013-2016	
	No.	Amount
State Program for Promotion of talent and employability	1.951	98.055.239 €
State R+D+I program focused on the challenges of society	962	162.168.827 €
State Program of business leadership in R + D + I	9	553.118 €
State Program for the promotion of scientific and technical research of excellence	1.291	165.643.395 €
TOTAL	4.213	426.420.579 €

Source: MINECO and own compilation

■ **Projects approved from National Plan of R&D&I sources. 2000-2016**

YEAR	NATIONAL PLAN	
	No.	€
2000	354	12.645.930,00
2001	384	28.900.360,00
2002	420	30.556.907,00
2003	422	36.330.180,00
2004	461	37.299.065,00
2005	450	37.775.844,00
2006	511	51.184.775,07
2007	497	55.648.334,00
2008	460	51.367.464,50
2009	495	54.978.025,97
2010	519	52.470.045,00
2011	471	48.186.143,03
2012	400	36.580.127,00
2013	417	41.855.319,00
2014	397	41.095.351,00
2015	413	44.261.195,00
2016	427	52.233.655,10

Note: The projects are accounted for R&D and R&D Social Challenges
 Source: MINECO and own compilation

■ Funding granted to R&D projects of National Plan of R&D&I by institutions. 2000-2016

INSTITUTIONS	AMOUNT (euros)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
University of Almería	420.848,00	1.774.562,00	1.499.370,00	876.600,00	2.005.070,00	1.791.345,00	1.771.077,00	2.938.208,00	2.609.607,00	1.335.235,04	2.121.614,00	1.774.438,38	1.583.900,00	1.020.098,50	2.079.627,00	1.595.627,00	912.219,00	
University of Cádiz	413.273,00	1.959.515,00	1.658.098,00	1.405.625,00	1.652.995,00	3.003.798,00	1.617.636,90	2.568.346,00	4.086.593,50	2.243.703,04	2.611.906,00	1.882.276,00	1.379.875,00	2.154.337,06	1.875.621,00	1.651.287,00	1.836.659,00	
University of Córdoba	1.643.468,00	2.940.919,00	3.807.210,00	1.827.320,00	3.504.705,00	4.474.043,00	2.731.817,00	4.649.304,00	4.652.087,00	2.537.854,03	3.438.457,00	4.627.152,53	1.105.650,00	2.621.938,00	3.813.315,00	1.939.872,00	3.403.488,00	
University of Granada	2.433.739,00	5.254.110,00	4.920.179,00	5.935.265,00	6.178.535,00	7.290.059,00	8.393.275,11	11.043.670,00	9.821.086,00	10.110.034,32	8.831.911,00	8.658.739,43	5.707.681,00	7.685.684,55	7.317.233,00	7.372.772,00	8.533.404,00	
University of Huelva	493.691,00	491.005,00	682.470,00	880.540,00	1.067.685,00	482.902,00	1.287.798,16	1.632.411,00	1.005.026,00	843.854,02	2.422.783,00	1.029.211,48	349.479,00	908.402,00	1.438.811,00	776.578,00	857.890,00	
University of Jaén	680.785,00	622.259,00	374.410,00	758.750,00	778.910,00	826.812,00	1.430.967,78	1.175.152,00	1.232.506,00	2.527.206,09	860.915,00	1.255.350,80	1.565.800,00	1.106.330,00	800.294,00	1.864.005,00	2.034.373,00	
University of Málaga	947.080,00	2.331.310,00	3.031.440,00	5.924.910,00	2.744.505,00	4.331.124,00	6.021.485,14	5.651.789,00	6.018.661,00	4.681.853,09	5.248.617,00	4.714.491,54	2.917.816,00	3.247.162,93	4.942.729,00	3.651.296,00	3.961.915,10	
University of Sevilla	2.601.485,00	6.128.653,00	5.866.175,00	7.552.170,00	7.302.885,00	6.189.436,00	11.336.395,62	11.756.723,00	7.757.552,00	11.374.726,25	10.502.437,00	6.770.908,32	6.664.179,00	9.838.679,47	5.646.223,00	8.568.978,00	11.665.489,00	
University of Pablo de Olavide	145.733,00	160.598,00	1.015.290,00	627.140,00	597.160,00	1.214.276,00	1.475.735,36	1.894.618,00	2.186.349,00	1.246.663,06	1.137.884,00	2.267.387,54	1.594.008,00	1.623.044,86	1.877.073,00	803.440,00	1.622.610,00	
University Loyola Andalucía	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56.628,00	158.268,00
CSIC	2.655.150,00	6.304.892,00	6.633.490,00	9.135.710,00	10.670.585,00	7.493.549,00	14.197.293,00	12.020.503,00	10.469.162,00	17.400.647,02	14.103.881,00	14.467.947,01	12.819.339,00	11.400.741,63	10.814.375,00	13.675.299,00	16.399.130,00	
Foundations - SAS	0,00	169.180,00	103.500,00	721.500,00	287.500,00	215.390,00	364.210,00	209.280,00	509.410,00	526.350,01	924.440,00	324.280,00	269.100,00	108.900,00	72.600,00	651.343,00	340.010,00	
IFAPA	130.588,00	46.447,00	41.734,00	0,00	28.750,00	182.070,00	91.960,00	88.330,00	332.750,00	108.900,00	108.900,00	90.750,00	198.900,00	0,00	0,00	229.900,00	0,00	
Other institutions	80.090,00	0,00	373.800,00	684.650,00	479.780,00	280.840,00	465.124,00	0,00	686.675,00	41.000,00	156.300,00	323.210,00	424.400,00	140.000,00	417.450,00	1.424.170,00	508.200,00	
TOTAL	12.645.930,00	28.183.450,00	30.007.366,00	36.330.180,00	37.299.065,00	37.775.844,00	51.184.775,07	55.648.334,00	51.367.464,50	54.978.025,97	52.470.045,00	48.186.143,03	36.580.127,00	41.855.319,00	41.095.351,00	44.261.195,00	52.233.655,10	

Note: The projects are accounted for R&D and R&D Social Challenges
Source: MINECO and own compilation

■ Funding granted to R&D projects of National Plan of R&D&I by scientific-technical areas. 2000-2016

SCIENTIFIC-TECHNICAL AREAS	AMOUNT (euros)																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AGR	3.002.618,00	4.533.695,00	4.577.170,00	4.745.550,00	4.453.840,00	4.689.552,00	6.707.272,00	6.144.743,00	7.085.760,00	7.654.460,06	5.604.720,00	7.434.240,00	5.185.440,00	4.587.740,00	6.074.200,00	4.856.940,00	5.569.630,00
BIO	1.569.179,00	5.188.322,00	7.260.605,00	7.933.310,00	6.960.250,00	7.055.986,00	13.388.052,26	10.347.315,00	6.370.650,00	4.397.140,00	3.035.890,00	6.030.640,00	5.619.510,00	8.798.010,00	4.587.110,00	7.346.999,00	10.793.200,00
CTS	93.691,00	1.824.775,00	1.058.250,00	1.099.720,00	1.489.510,00	1.651.958,00	2.835.030,00	2.999.348,00	3.686.870,00	7.929.130,04	9.680.000,00	2.220.350,00	2.624.310,00	1.759.690,00	1.282.600,00	3.622.619,00	3.037.100,00
FQM	2.533.138,00	5.417.230,00	4.669.275,00	5.220.290,00	6.357.730,00	7.013.027,00	8.412.774,26	9.615.870,00	6.559.773,00	12.411.938,18	9.542.060,00	11.971.425,40	7.351.461,00	6.412.961,28	8.925.202,00	9.225.887,00	10.440.001,00
HUM	2.155.475,00	906.097,00	1.981.585,00	2.446.500,00	1.592.740,00	2.132.837,00	1.507.781,00	4.031.962,00	4.295.016,00	5.367.681,21	4.527.941,00	3.549.898,00	2.699.190,00	3.892.570,00	4.727.470,00	3.778.467,00	5.242.930,00
RNM	1.777.856,00	4.412.271,00	4.491.532,00	5.515.270,00	5.986.440,00	6.924.848,00	2.916.584,00	7.908.873,00	8.686.227,00	8.109.401,18	9.061.416,00	7.146.623,00	6.272.060,00	7.382.040,00	5.016.781,00	6.320.435,00	6.707.030,00
SEJ	802.853,00	785.844,00	665.976,00	1.124.840,00	1.189.960,00	1.096.228,00	3.239.889,95	1.757.041,00	2.148.960,00	1.562.473,14	2.605.130,00	1.795.585,55	1.090.323,00	1.609.946,00	1.782.693,00	1.400.575,00	1.214.719,00
TEP	321.388,00	2.533.016,00	2.553.550,00	1.903.535,00	3.639.675,00	3.721.614,00	7.349.310,10	6.161.683,00	8.514.225,50	5.167.426,12	6.897.847,00	6.566.863,24	4.029.129,00	5.598.264,52	6.706.304,00	5.816.712,00	7.125.448,00
TIC	389.732,00	3.299.110,00	3.296.964,00	6.341.165,00	5.628.920,00	3.489.794,00	4.828.081,50	6.681.499,00	4.019.983,00	2.378.376,04	1.515.041,00	1.470.517,84	1.708.704,00	1.814.097,20	1.992.991,00	1.892.561,00	2.103.597,10
TOTAL	12.645.930,00	28.900.360,00	30.556.907,00	36.330.180,00	37.299.065,00	37.775.844,00	51.184.775,07	55.648.334,00	51.367.464,50	54.978.025,97	52.470.045,00	48.186.143,03	36.580.127,00	41.855.319,00	41.095.351,00	44.261.195,00	52.233.655,10

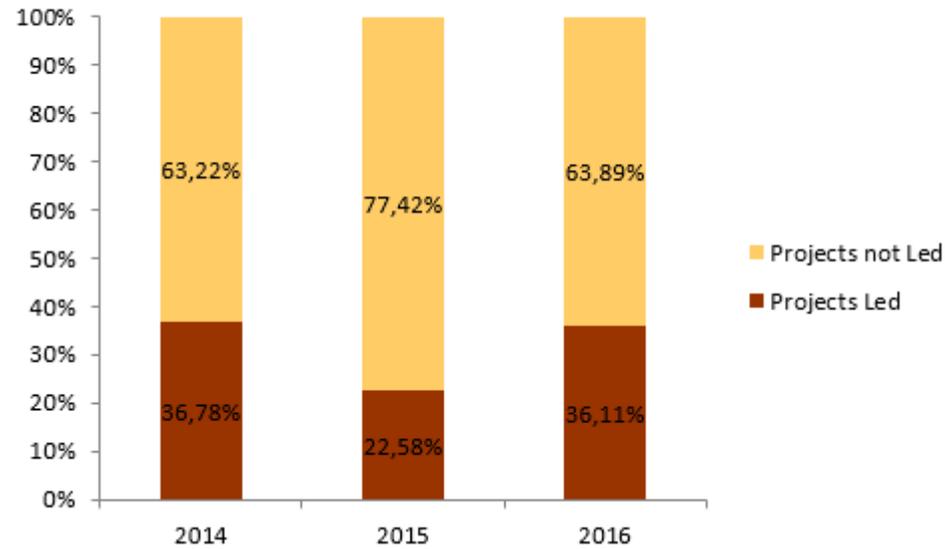
Note: The projects are accounted for R&D and R&D Social Challenges
Source: MINECO and own compilation

■ **Andalusian participation in the Horizon 2020. 2014-2016**

H2020	Granted activities	Participations	Amount Granted (millions of €)	RETURN
2014	87	107	32,38M€	7,17%
2015	93	117	42,87M€	6,60%
2016	252	140	45,15M€	6,64%

Source: CDTI and own compilation

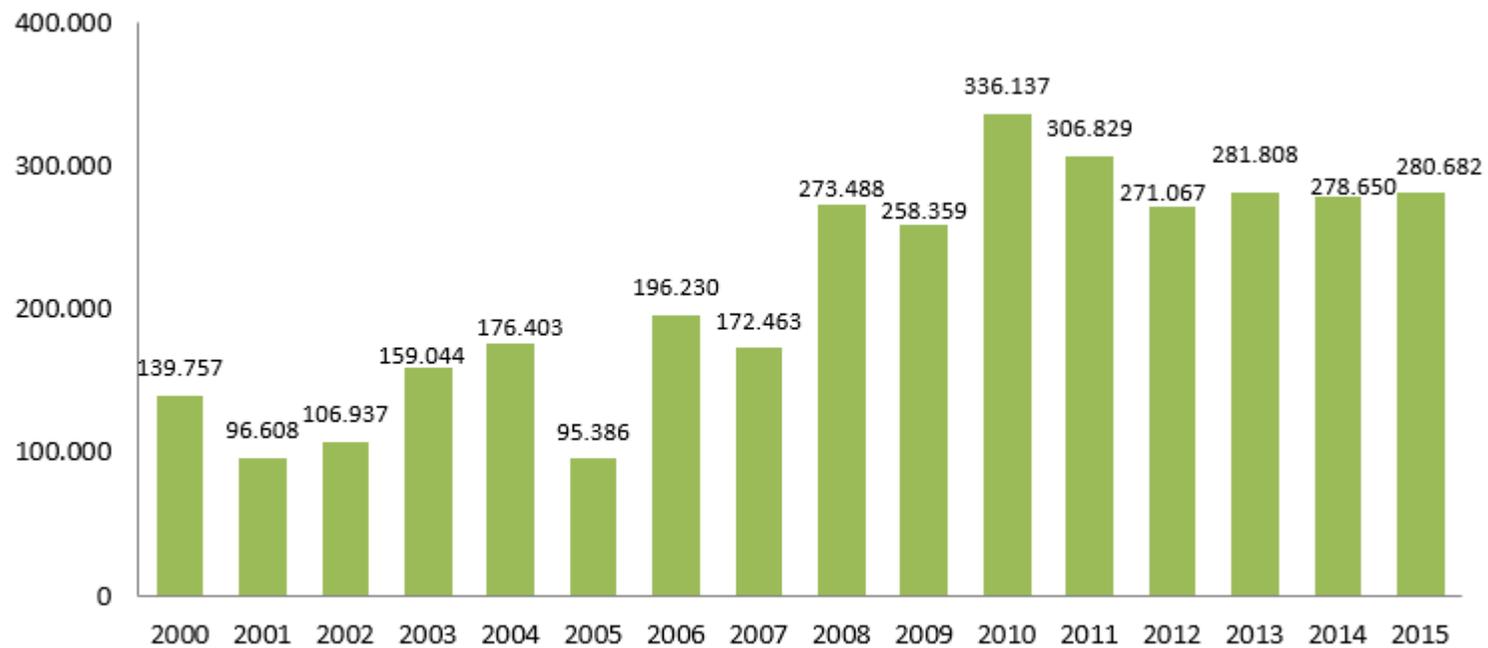
■ Projects led vs not led in the Horizon 2020. 2014-2016



Source: CDTI and own compilation

HIGH TECHNOLOGY

■ R&D internal expenditure in high tech sectors (thousand €). 2000-2015



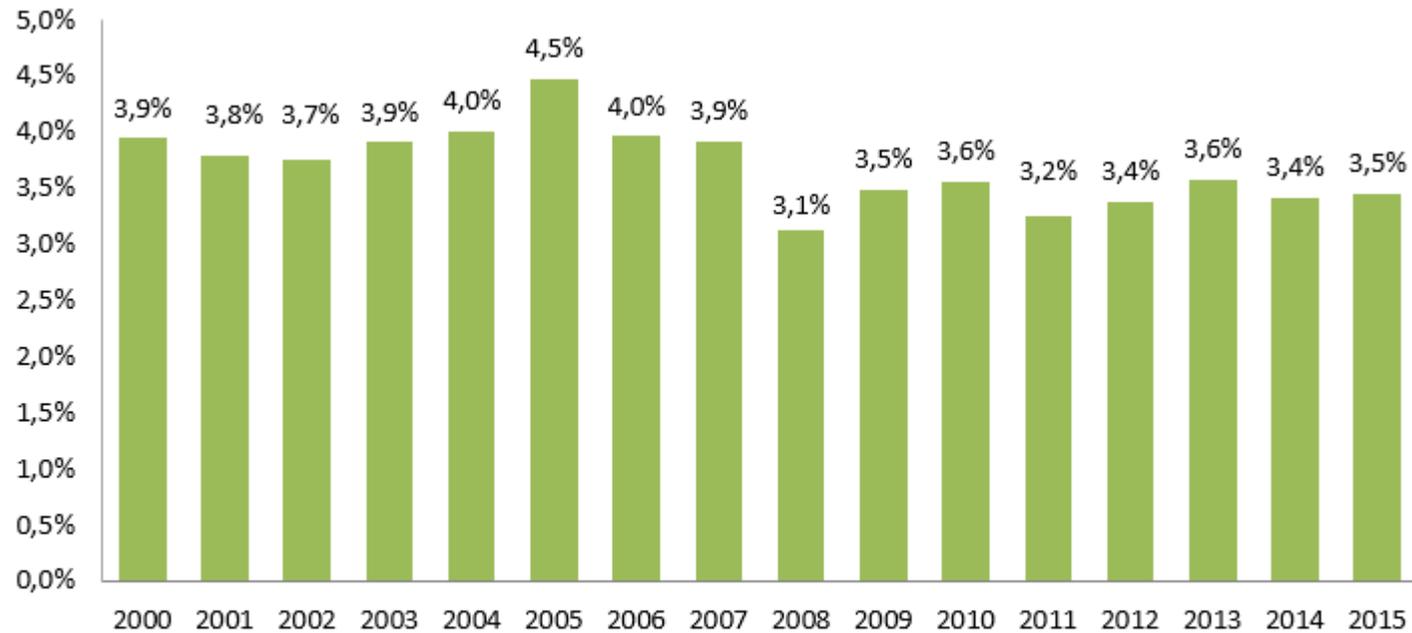
Source: INE and own compilation

■ R&D personnel (FTE) employed in high tech sectors. 2001-2015



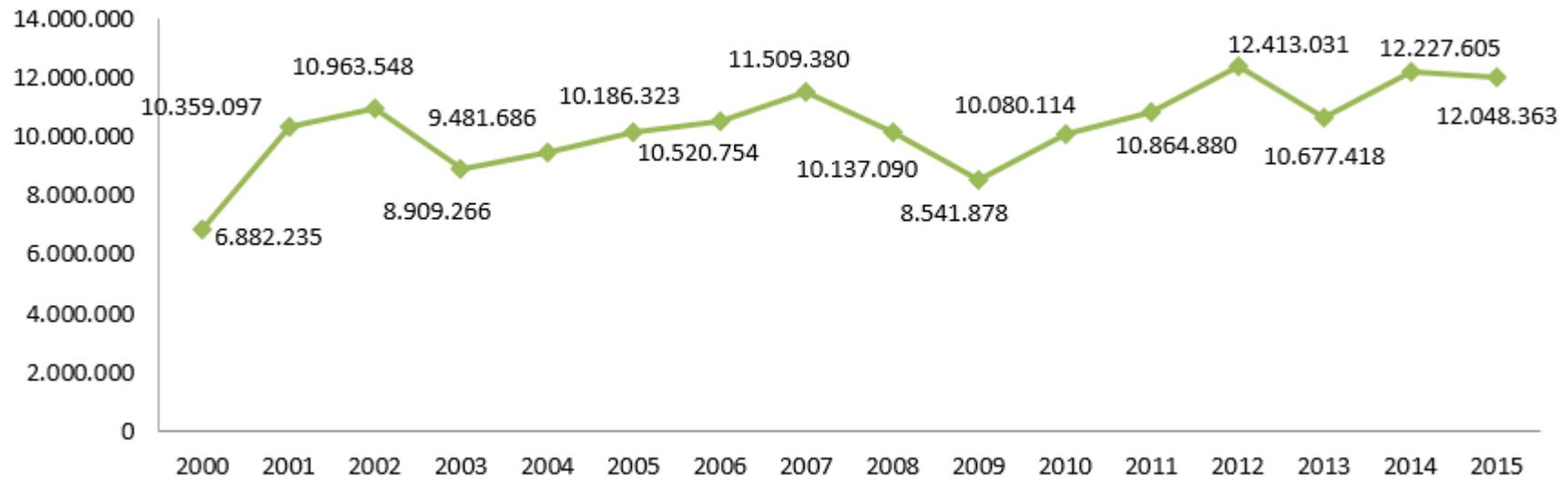
Source: INE and own compilation

■ Percentage of employed persons in high tech sectors to total employed persons. 2000-2015



Source: INE and own compilation

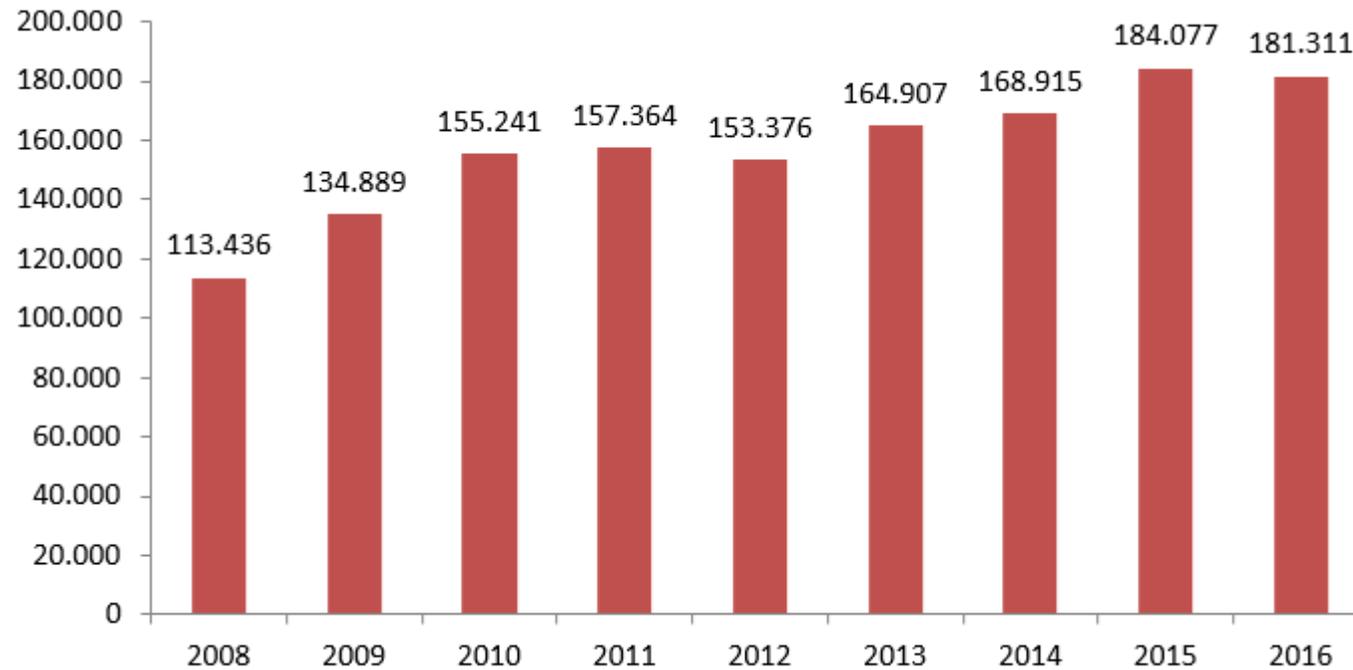
■ Turnover in high-tech sectors (thousand €). 2000-2015



Source: INE and own compilation

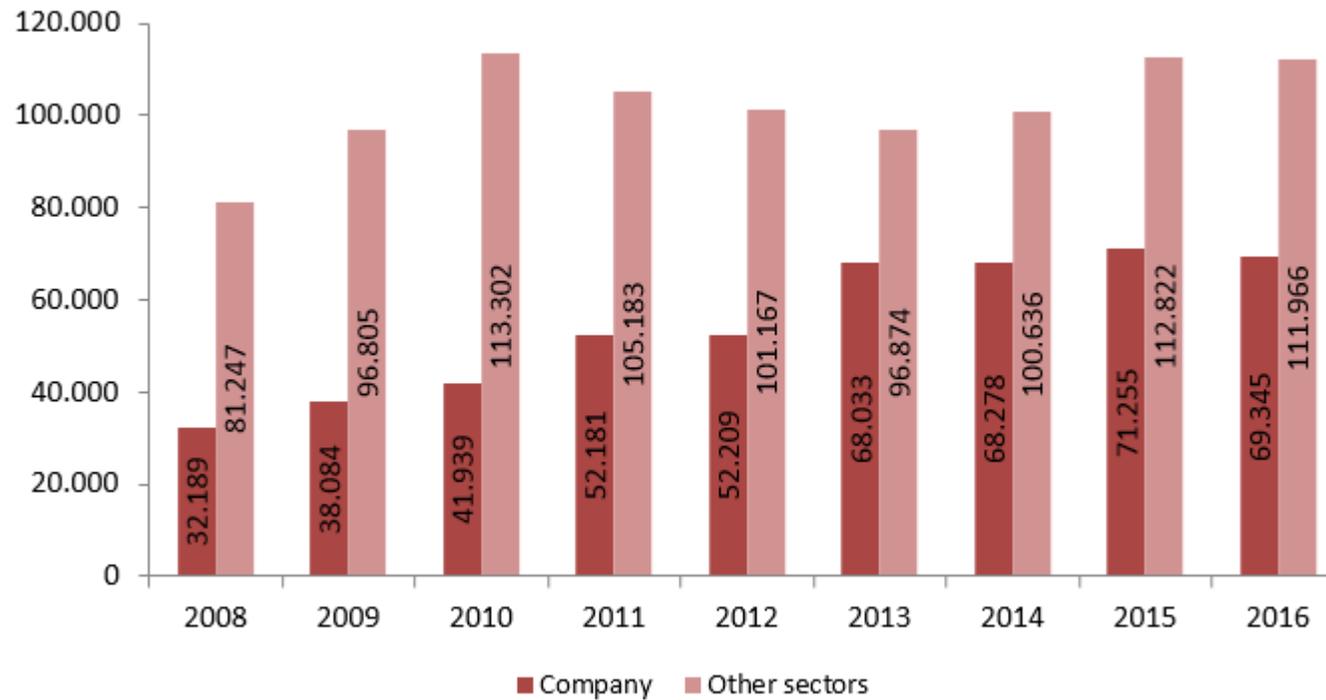
BIOTECHNOLOGY

■ R&D internal expenditure in biotechnological activities (thousand €). 2008-2016



Source: INE and own compilation

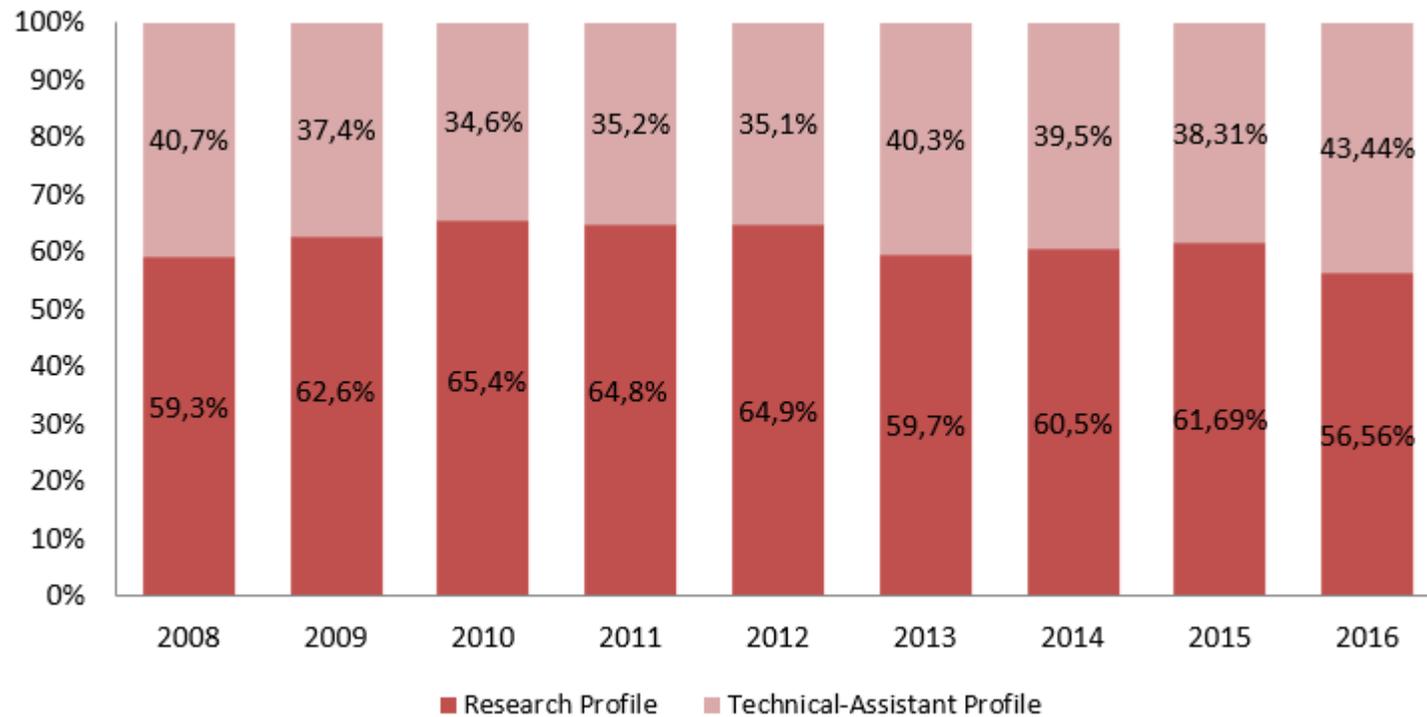
■ R&D internal expenditure in biotechnological activities by sectors of performance (thousand €). 2008-2016



Source: INE and own compilation

Note: The remaining sectors including the Public Administration, Higher Education and Private Non Profit Institutions

■ **Percentage of employed persons in biotechnological activities in R&D (FTE) by profiles. 2008-2016**



Source: INE and own compilation



■ ■ ■ ABBREVIATIONS AND ACRONYMS

- ACTA:** Technological Knowledge Accredited Agent
- ADMON:** Administration
- AGR:** Agrifood
- BIO:** Biology and Biotechnology
- CDTI:** Industrial Technological Development Centre
- CII:** Research Centre and Institute
- CIT:** Technological Innovation Centre
- CSIC:** Spanish National Research Council
- CT:** Technological Centre
- CTA:** Advanced Technological Centre
- CTS:** Health Sciences and Technologies
- DCT:** Space of Scientific-Technological Dissemination
- DGITC:** General Direction for Research and Knowledge Transfer
- EIN:** Innovative Businesses or companies with innovation underway or unsuccessful
- EIT:** INE Technological Innovation Survey
- ETC:** Knowledge Transfer Entity
- EU:** European Union
- FP:** European Union Framework Programme
- FQM:** Physics, Chemistry and Mathematics
- FTE:** Full Time Equivalent
- GDP:** Gross Domestic Product



GDP mp: Gross domestic product at market prices

H2020: Horizon 2020

HUM: Humanities

IFAPA: Research and Training Institute of Agriculture, Fisheries, Food and Ecological Production

INE: National Statistics Institute

ISI: Institute for Scientific Information

LIA: Instrumental Line of Action

MECS: Ministry of Education, Culture and Sport

OEPM: Spanish Patent and Trademark Office

OI: Other Institutions

OPI: Public Research Body

PAIDI: Andalusian Research, Development and Innovation Plan

PCT: Scientific and Technological Park

PCT: Patent Cooperation Treaty

PNPI: Private Non Profit Institutions

PRs: Principal Researchers

PIE: Business Innovation Park

R&D: Research & Technological Development

R&D&I: Research & Technological Development & Innovation

RNM: Natural Resources and Environment

SAS / Foundations: Andalusian Health System / Foundations

SEJ: Social, Economic and Legal Sciences

SICA: Andalusian Scientific Information System



TEP: Production Technologies

TIC: Information and Communication Technologies

UAI: University of Almeria

UCa: University of Cadiz

UCo: University of Cordoba

UGr: University of Granada

UHu: University of Huelva

UJa: University of Jaen

UMa: University of Malaga

Univ.: University

UPO: University Pablo of Olavide

USe: University of Seville

■ ■ ■ GLOSSARY OF TERMS

INNOVATIVE ACTIVITY: All the scientific, technological, organizational, financial and commercial activities which lead actually or potentially to the implementation of innovations. Some of these activities are themselves innovative; others are not novel activities however they are necessary for the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation. (Oslo Manual, 2005).

HIGH TECHNOLOGY: The sectors and products within the so-called high technology can be defined, generically, as those which, given their degree of complexity, require a continuous effort in research and a solid technological base. (Methodology of High Technology Indicators, INE).

TURNOVER: This includes the amounts invoiced by the company during the reference year for the provision of services and sale of goods that are the object of the company's trade. Deductible VAT invoiced by suppliers will not be included in the valuation. These are accounted for, including the taxes paid on the goods and services, with the exception of the VAT paid by the client. They are accounted for in net terms, deducting returns of sales, as well as volume discounts. Neither cash discounts nor discounts for prompt payment are deducted. (INE Methodology).

FTE: The sum of the staff working full-time, and the fractions of time of the staff working part-time, for R&D activities. (EIT, INE).

EIN COMPANIES: Innovative businesses or companies with innovations underway or unsuccessful. (Statistics INE).

INNOVATIVE FIRM: The company which has implemented an innovation during the period under review. (Oslo Manual, 2005).

INNOVATION EXPENDITURES: Expenditures are measured on the basis of the sum of innovation activities over a specific period of time. An alternative would be to collect information on total expenditures on activities related to individual innovations. (Oslo Manual, 2005).

INTRAMURAL EXPENDITURES ON R&D: Intramural expenditures are all expenditures for R&D performed within a statistical unit or sector of the economy during a specific period, whatever the source of funds. (Frascati Manual, 2002).

R&D: Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. (Frascati Manual, 2002).

INNOVATION: Implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. (Oslo Manual, 2005).

PATENT: Title that recognizes the right to exclusively exploit a patented invention, preventing others from the manufacturing, sale or use of such invention without the consent of the holder. The patent may refer to a new procedure, new apparatus, a new product or the perfection or improvement of same. The patent is valid for twenty years since the submission application date. To keep a patent in force concession annuities are to be paid. There are three International patent application procedures:

- National: By means of the filing of a patent application in each one of the states in which protection is sought. For example at the Spanish Patent and Trademark Office (SPTO).
- European: The European Patent system allows to obtain protection by means of a European direct patent application with the designation of those European States in which protection is sought, and which are part of the European Patent Convention (24 countries). The European patent application is processed by the European Patent Office (EPO) and the granting of the patent has the same effect as a national patent in all those states in which it is granted.

- International P.C.T. (Patent Cooperation Treaty): The PCT system allows for protection to be claimed for the invention in each one of the States which are party to the international treaty (148 countries as of 12th July 2013), by means of one sole application known as international application. (EIT Methodology, INE).

R&D PERSONNEL: Number of personnel employed in R&D:

- Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned.
- Technicians and equivalent staff are personnel whose main tasks require technical knowledge and experience in one or more fields of engineering, physical and life sciences or social sciences and humanities. They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, usually under researchers' supervision. Equivalent staff performs the corresponding R&D tasks under the researchers' supervision in the social sciences and humanities.
- Other supporting staff includes skilled and unskilled craftsmen, secretarial and clerical staff participating in R&D projects or directly associated with such projects. (Frascati Manual, 2002).