2011 Statistics on Research, Development and Innovation

Contents

Rannis – The Icelandic Centre for Research

The Icelandic Centre for Research (Rannis) supports research, technological development and innovation in Iceland. Rannis reports to the Ministry of Education, Science and Culture and cooperates with the Icelandic Science and Technology Policy Council with the purpose of providing professional assistance in the preparation and implementation of the science and technology policy in Iceland. Rannis serves the Icelandic science community across all fields of science.

The main functions of Rannis are the following:

- Rannis operates the public competitive financial support system for research and technological development. This includes the Research Fund, the Fund for Research Equipment and the Graduate Research Fund on behalf of the Ministry of Education, Science and Culture, and the Technology Development Fund under the Ministry of Industry, Energy and Tourism. Each of the funds is governed by a Board of Directors, the allocation of grants being subject to an extensive peer review processes.
- Rannis provides the Science and Technology Policy Council and its subcommittees with information on scientific research and technology development nationally and internationally as a basis for the policy making process.
- Rannis coordinates and promotes Icelandic participation in various international research and development activities and interacts with corresponding agencies and research councils in other countries. Rannis is the NCP host organisation for the EU's 7th Framework Programme.
- Rannis monitors resource allocation in Iceland and R&D activities, evaluates the results of scientific research, technical development and innovation, and participates in international benchmarking of the results.
- Rannis promotes public awareness of research and innovation in Iceland.

Icelandic statistics on research, development and innovation

This booklet provides an abstract of research and development (R&D) statistics in Iceland and is based on an extensive database that has been collated by Rannis and its predecessors since 1970. Previous booklets can be downloaded from the Rannis website (www.rannis.is). The collection and processing of the data has been organised in accordance with the procedures in OECD's Frascati Manual. Furthermore, Rannis actively collaborates with Eurostat and various institutions in the Nordic countries. Rannis' survey of R&D activities in Iceland is conducted biannually. In 2005, data was gathered from 1.200 companies selected from the Statistics Iceland database of firms with more than four employees, as well as public institutions involved in R&D. In addition to the R&D survey, Rannis collects data on R&D from a number of external sources, e.g. commercial companies, public institutions, including institutions of applied industrial research, higher education and private non-profit organisations.

Other analysing and statistical activities

Rannis performs statistical work in a number of fields other than R&D. One important area is the collation and processing of data on innovation among Icelandic companies, using information supplied by Statistics Iceland; this forms part of a European Project, CIS (Community Innovation Survey) conducted by Eurostat in collaboration with the OECD. Rannis also processes data in the field of education supplied by Statistic Iceland, the University of Iceland and others. Moreover, Rannis processes data on publications and citations and on patent applications and grants. Researchers from Rannis play an active part in collaborative Nordic and European projects in areas relating to statistics and policy-making in the sciences, technology, innovation and other aspects of the knowledge-based economy.

Research and development (R&D)* refers to any 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. R&D covers three activities: basic research, applied research and experimental development.

Basic research refers to experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view.

Applied research refers to original investigation undertaken to acquire new knowledge; it is directed primarily at a specific practical aim or objective.

Experimental development refers to systematic work, drawing on existing knowledge gained from research and practical experience, directed at producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

Innovation** is the implementation of a new or significantly improved product (goods or services), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations. Innovation is always at least new for the firm, but may also be new for the local environment or the world as a whole.

Four types of innovation are distinguished: product innovation, process innovation, marketing innovation and organisational innovation.

Product innovation is the introduction of goods or services that are new or significantly improved with respect to characteristics or intended use. This includes significant improvement in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.

Process innovation is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

Marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

Organisational innovation is the implementation of a new organisational method in a firm's business practices, workplace organisation or external relations.

* Frascati Manual, 2002.
** Oslo Manual, 2005.

- Government appropriations to research and development, as stated in the national budget, in fixed 2010 prices amounted to 17,4 billion ISK (ca.106 MEUR) in 2010 and 15,3 billion ISK (ca. 94 MEUR) in 2011. Approximately 40% of the contribution was allocated to the higher education sector and 30% to various public institutions.

- In 2011, public competitive funding of research and development was a sum of two billion ISK (ca. 12 MEUR). Public competitive funding accounted for 17% of the total R&D expenditure.

- The European Union, in 2007 to 2010, allocated four billion ISK (ca. 24 MEUR) to Icelandic partners participating in the EU's 7th Framework Programme.

- In 2007, 7,8% of the GDP in Iceland was allocated to educational institutions, this share is a little over the OECD average. Icelanders allocate proportionally relatively less to tertiary education and relatively more to primary, secondary and post-secondary education compared to other OECD countries.

- 31% of Icelanders, 25 to 64 years old, have tertiary education, which is a little above the OECD average of 28% of people in this age range with tertiary education.

- In 2009, 82 Icelanders attained their doctorate degree. Women were in majority of graduates (63%).

- In 2009, R&D expenditure in Iceland amounted to 46,5 billion ISK (ca. 214 MEUR). As a share of the GDP, R&D expenditure accounted for 3,1%.

- Iceland ranked fifth among OECD countries for the R&D/GDP ratio.

- The total R&D expenditure in fixed priced has increased by 700 hundred million ISK (4 MEUR) since 2007. However the GDP has decreased by 200 million ISK (ca. 1 MEUR) since 2007.

- Of all sectors, R&D expenditure was highest in the health sector and industry in 2009.

- In 2009, 49% of the total expenditure on R&D was financed by the private sector, 40% by the government and 10% of the funding came from abroad.

- In total 5.500 persons performed R&D in Iceland in 2009, accounting for approximately four thousand full time equivalents (FTE). Most of the FTE's (42%) were performed within the private sector.

- 76% of the FTE's were performed by researchers and mostly men performed the R&D.

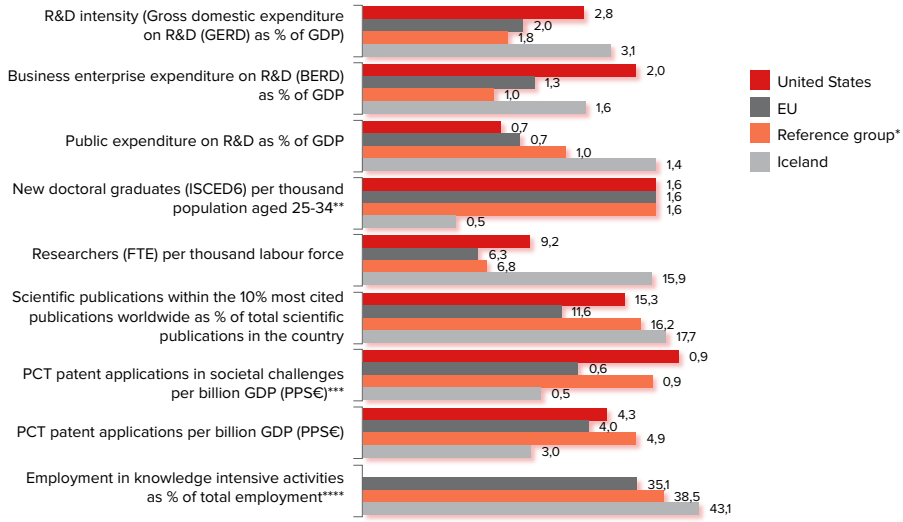
- 57% of Icelandic firms, with at least four employees, took part in innovative activities during 2006 to 2008.

- Iceland has shown the largest increase (900%) in the publication of articles in peer reviewed journals in relative terms since the early 1980s. The relative growth of other Nordic countries has been considerably lower.

- The number of Icelandic patent applications to the European Patent Office has increased by 40% in a ten year period, from 13,7 applications per hundred thousand inhabitants in 2001 to 22 applications in 2010.

List of tables and figures

Figure 1. Overview of research, development and innovation in Iceland in 2009.



Source: Innovation Union Competitiveness report, 2011. The sources date back to 2007 to 2009, an emphasis is placed on publishing the most recent data.
*The reference group comprises Ireland, Luxembourg, the Netherlands, Iceland and Norway. **The statistics on new doctoral graduates only include graduations from Icelandic universities and no graduations from abroad. ***Patent applications in societal challenges refer to the number of PCT patent applications in climate change mitigation and health. Patents in climate change mitigation equal those in renewable energy, electric and hybrid vehicles and energy efficiency in buildings and lighting. Patents in health-related technologies include those in medical technology. ****Knowledge-intensive activities are defined, based on EU Labour Force Survey data, as all ISAT industries at 2-digit level where at least 33% of employment has a higher education degree (ISCED5 or ISCED6).

Source: Innovation Union Competitiveness Report, 2011.

Table 1. **Government appropriations to research and development by source of funding in million ISK in fixed 2011 prices from 2010 to 2011.**

	R&D of total contribution (fixed prices) in 2010	Percentage in 2010	R&D of total contribution in 2011	Percentage in 2011	Change from 2010 to 2011 in %
Ministry of Education, Science and Culture	10.696	61,3	9.240	60,3	-13,6
Ministry of Industry, Energy and Tourism	1.314	7,5	1.172	7,6	-10,8
Ministry of Fisheries and Agriculture	2.902	16,6	2.532	16,5	-12,8
Ministry of Welfare	1.367	7,8	1.277	8,3	-6,6
Ministry for the Environment	965	5,5	944	6,2	-2,2
Ministry of the Interior	191	1,1	169	1,1	-11,4
Total	**17.434**	**100**	**15.334**	**100**	**-12,0**

Source: Rannis..

1. Foundations for research, development and innovation
1.1. Government appropriations to research and development based on the state budget

Table 2. **Government appropriations to research and development by recipient in million ISK in fixed 2011 priced from 2010 to 2011.**

	R&D of total contribution (fixed prices) in 2010	Percentage in 2010	R&D of total contribution in 2011	Percentage in 2011	Change from 2010 to 2011 in %
Universities and university institutions	7.244	41,6	6.441	42,0	-11,1
EU Framework Programme for R&D	1.498	8,6	1.016	6,6	-32,2
Funds	2.945	16,9	2.675	17,4	-9,2
Institutions	5.483	31,5	4.971	32,4	-9,4
Projects	264	1,5	232	1,5	-20,2
Total	**17.434**	**100**	**15.334**	**100**	**-12,0**

Source: Rannis.

Table 3. **Public competitive funding of research and development in million ISK in variable prices and fixed 2009 prices from 2007 to 2011.***

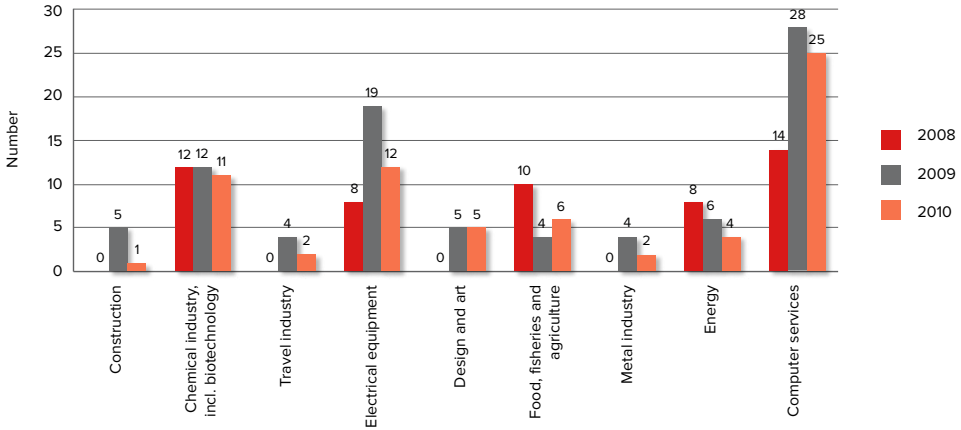
	Variable prices					Fixed prices				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
The Icelandic Research Fund	590	750	815	815	783	769	871	815	758	704
The Technology Development Fund	500	600	690	720	720	651	697	690	670	647
The Equipment Fund	110	115	115	115	111	143	134	115	107	100
The Icelandic Research Fund for Graduate Students	80	90	100	100	96	104	105	100	93	86
Strategic Research Programmes	105	160	315	315	285	137	186	315	293	256
Funds administered by Rannis	**1.385**	**1.715**	**2.035**	**2.065**	**1.995**	**1.804**	**1.991**	**2.035**	**1.921**	**1.793**
Increased Value in Fisheries (AVS)	235	335	335	306	266	306	389	335	285	239
Other funds	37	56	39	47	66	48	65	39	44	59
Total	**1.657**	**2.106**	**2.409**	**2.418**	**2.327**	**2.159**	**2.445**	**2.409**	**2.249**	**2.091**

*Based on the national budget.

Source: Rannis.

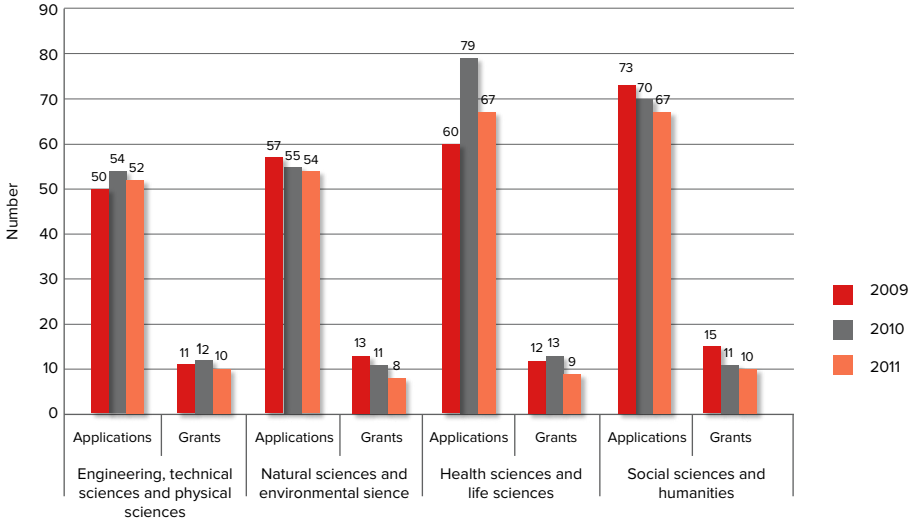
1. Foundations for research, development and innovation
1.2. The financing of research, development and innovation

Figure 2. **Number of grants from the Technology Development Fund by industrial classification from 2008 to 2010.**



Source: Rannis.

Figure 3. **Number of grants from the Icelandic Research Fund by fields of science from 2009 to 2011.**



Source: Rannis.

Table 4. **Overview of Icelandic participation in the EU's 7th Framework Programme from 2007 to 2010.***

Thematic Areas	Number of Icelandic projects	Number of Icelandic partners	Number of Icelandic applications	Success rate (%)	EU contribution to Icelandic partners in million €	Total EU contrib. to proj. with Icelandic participation in million €**
Health	13	14	56	23	6,7	75,9
Food, agriculture, fisheries and biotechnology	6	10	60	10	2,3	25,7
Information and communication technology	5	5	66	8	1,0	19,9
Nanosc., nanotechn., materials and new prod.	2	2	12	17	0,1	7,3
Energy	3	3	12	25	0,3	6,6
Environment, incl. climate change	14	14	42	33	2,4	67,1
Transport, incl. aeronautics	3	3	19	16	0,2	5,7
Socio-economic sciences and humanities	4	4	32	13	0,6	11,1
Space	2	2	4	50	0,1	3,0
Security	1	2	5	20	0,3	7,0
General Activities (Annex IV)	1	1	1	100	0,0	4,0
Ideas (European Research Council grants)	1	1	23	4	2,4	2,4
Mobility - Marie Curie actions	21	21	105	20	5,8	17,8
Research infrastructures	8	9	14	57	0,6	42,4
Research for the benefit of SME's	10	12	63	16	0,8	18,7
Regions of knowledge	0	0	3	0	0,0	0,0
Science in society	3	3	18	17	0,2	2,0
Support for the developm. of research policies	2	2	3	67	0,2	2,0
Total	**99**	**108**	**538**	**27**	**24,0**	**318,6**

* The 7th Framework Programme will be in place until 2013. The data was compiled in August 2011 and does therefore not reflect the overall results of Iceland's participation in the FP. **All EU funded projects.

Source: E-CORDA.

Table 5. **Expenditure on educational institutions as percentage of GDP by level of education in 2007.***

	Primary, secondary and post-secondary non-tertiary education	Tertiary education	Total all levels of education**	Tertiary educations as a share of total education
Belgium	4,1	1,3	**6,1**	**21,3**
Denmark	4,3	1,7	**7,1**	**23,9**
Finland	3,6	1,6	**5,6**	**28,6**
Netherlands	3,7	1,5	**5,6**	**26,8**
Ireland	3,5	1,2	**4,7**	**25,5**
Iceland	**5,1**	**1,2**	**7,8**	**15,4**
OECD average	3,6	1,5	**5,7**	**26,3**
Norway	3,7	1,3	**5,5**	**23,6**
Switzerland	4,0	1,2	**5,5**	**21,8**
Sweden	4,1	1,6	**6,3**	**25,4**
Germany	3,0	1,1	**4,7**	**23,4**

* The most recent sources date back to 2007.
** Expenditure on preschool education is included in the section showing total levels of education.

Source: OECD, Education at a Glance, 2010.

1. Foundations for research, development and innovation
1.3 Education

Table 6. **Percentage of the population that has attained tertiary-type B education or tertiary-type A and advanced research programmes, by age group.**

	Tertiary-type B education*					Tertiary-type A and advanced research programmes					Total tertiary					25-64 in thousands
Age	25-64	25-34	35-44	45-54	55-64	25-64	25-34	35-44	45-54	55-64	25-64	25-34	35-44	45-54	55-64	25-64
Belgium	16	20	17	15	12	16	23	18	14	10	32	42	35	29	22	1.866
Denmark	7	8	8	7	5	27	35	29	25	21	34	43	37	32	26	998
Finland	15	5	20	19	15	22	33	24	17	14	37	38	44	37	29	1.052
Netherlands	2	2	3	2	2	30	38	30	28	24	32	40	33	31	26	2.871
Ireland	12	14	13	10	7	22	31	23	17	12	34	45	37	27	19	792
Iceland	**3**	**2**	**4**	**4**	**3**	**28**	**31**	**32**	**26**	**21**	**31**	**33**	**36**	**30**	**24**	**51**
OECD avera.	9	10	10	9	7	21	27	22	18	15	28	35	29	25	20	-
Norway	2	2	2	3	3	34	44	36	29	25	36	46	38	32	28	894
Switzerland	10	10	11	11	9	23	29	25	21	18	34	38	36	31	27	1.433
Sweden	9	8	8	9	9	23	32	24	19	18	32	41	33	28	26	1.541
Germany	9	6	9	10	9	16	17	17	16	15	25	24	27	26	24	11.315

* Tertiary-type B programmes (ISCED 5B) are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.

Source: OECD.

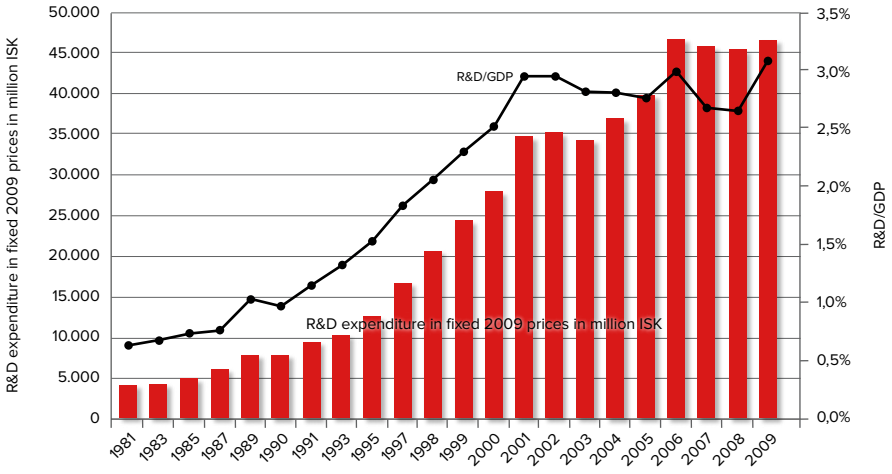
Table 7. **Number of doctoral degrees in the Nordic countries from 2004 to 2009.**

		2004	2005	2006	2007	2008	2009
Denmark	**Total**	960	1.103	975	1.072	1.138	1.239
	Per thousand population	17,8	20,4	18,0	19,8	21,1	22,9
	Women	385	456	398	449	478	570
	Men	506	647	577	623	660	669
Finland	**Total**	1.399	1.422	1.409	1.526	1.526	1.642
	Per thousand population	26,8	27,2	27,0	29,2	29,2	31,4
	Women	636	698	660	772	831	861
	Men	763	724	749	754	695	781
Iceland*	**Total**	66	69	58	48	58	82
	Per thousand population	22,5	23,3	19,1	15,4	18,2	25,7
	Women	31	41	31	26	25	52
	Men	35	28	27	22	33	30
Norway	**Total**	782	855	905	1.030	1.244	1.148
	Per thousand population	17,0	18,5	19,4	21,9	26,1	23,8
	Women	307	343	347	459	560	518
	Men	475	512	558	571	684	630
Sweden	**Total**	2.763	2.757	2.768	2.853	2.914	2.694
	Per thousand population	30,7	30,5	30,5	31,2	31,6	29,0
	Women	1.232	1.247	1.269	1.352	1.375	1.367
	Men	1.531	1.510	1.499	1.501	1.539	1.327

* Icelanders attaining doctoral degrees abroad accounted for.

Source: Norbal.

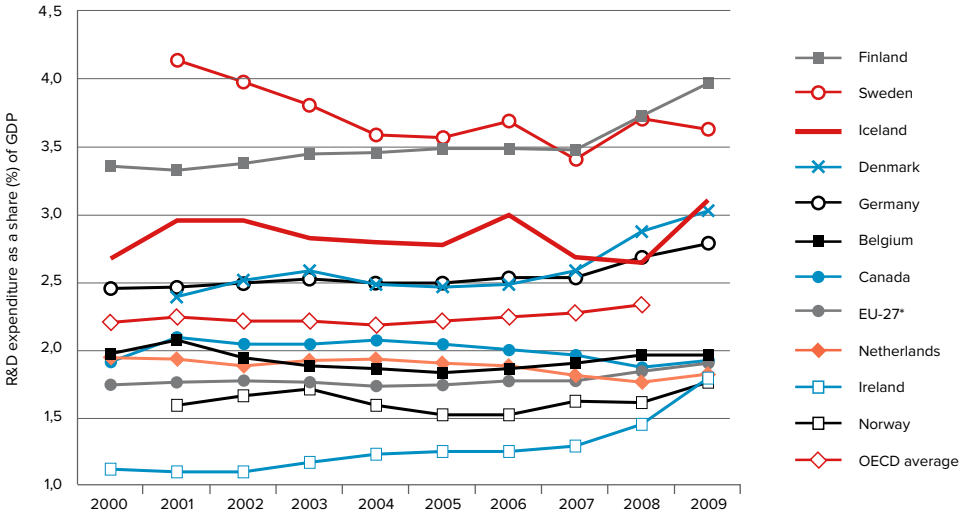
Figure 4. **Total R&D expenditure in fixed 2009 prices and R&D expenditure as percentage of Gross Domestic Product (GDP) from 1981 to 2009.***



* Statistics for even years are estimates.

Source: Rannis.

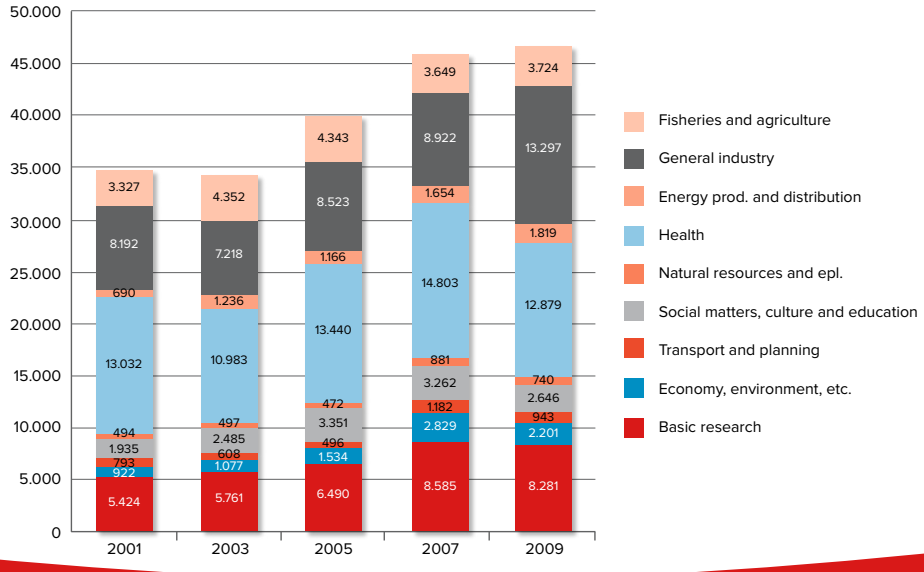
Figure 5. **R&D expenditure as a share (%) of GDP in various OECD countries from 2000 to 2009.**



* The 27 EU member states as of January 1st, 2007.

Source: Rannis and OECD, Main Science and Technology Indicators, 2010.

Figure 6. **R&D expenditure by theme in fixed 2009 prices in million ISK from 2001 to 2009.**



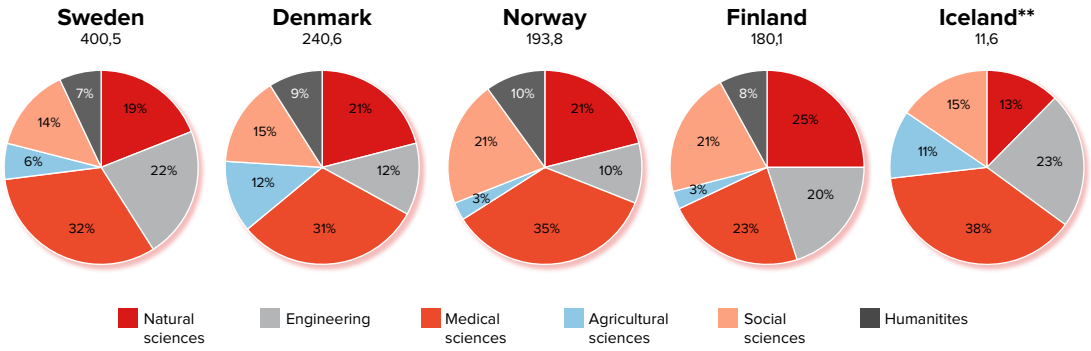
Source: Rannis.

Table 8. **Total R&D expenditure by source of funds and performing sector in million ISK in 2009.**

Source of funding	Performing organisation								Total funding	
	Business enterprises	%	Higher education	%	Public organis.	%	Private non-prof.	%	Total	%
Business enterprises	21.054	85,6	946	8,2	670	7,2	-	-	**22.669**	48,7
Public funding	966	3,9	9.471	81,9	7.962	85,3	412	39,7	**18.810**	40,4
Private non-profit	-	-	152	1,3	-	-	93	8,9	**245**	0,5
From abroad	2.579	10,5	995	8,6	697	7,5	534	51,4	**4.805**	10,3
Total performed	**24.599**	**100**	**11.564**	**100**	**9.329**	**100**	**1.038**	**100**	**46.530**	**100**
Share (%) of total R&D expenditure	**52,9**		**24,9**		**20,0**		**2,2**		**100**	

Source: Rannis.

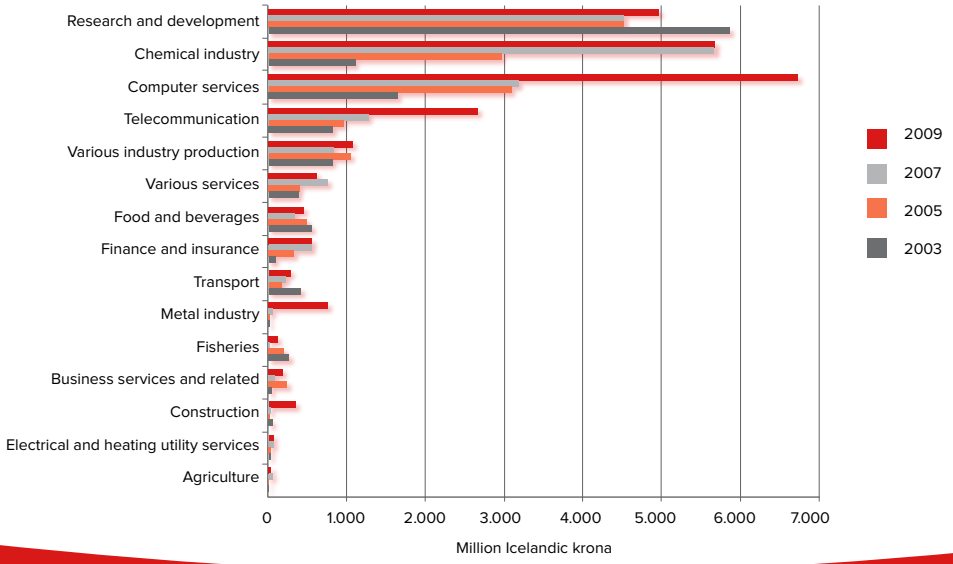
Figure 7. **R&D expenditure in the higher education sector by field of science in the Nordic countries in million ISK in 2007.***



* The most recent OECD sources on R&D expenditure in the higher education sector date back to 2007.
** R&D expenditure within the humanities in the Icelandic higher education sector measures less than half a percent

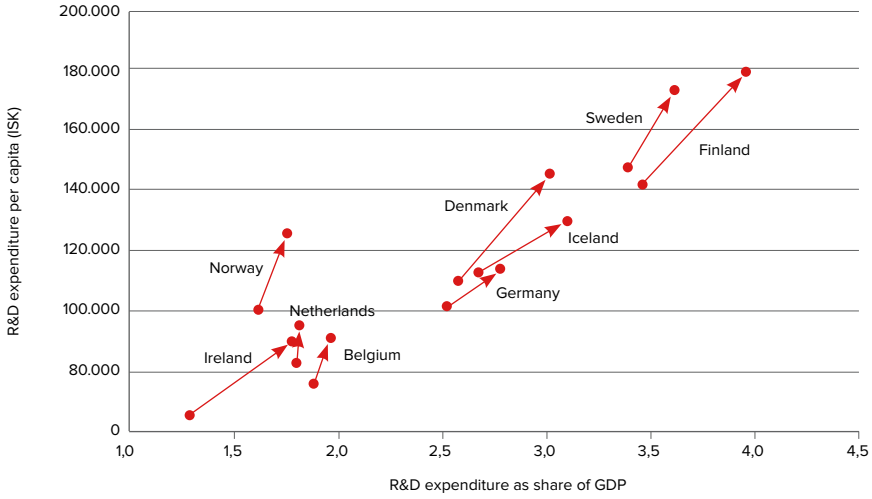
Source: Rannis and OECD, Science, Technology and R&D Statistics.

Figure 8. **R&D expenditure by business sector by NACE classification in million ISK from 2003 to 2009.**



Source: Rannis.

Figure 9. **Total R&D expenditure per capita and R&D expenditure as a share of GDP in various OECD countries. Development from 2007 to 2009.**



Source: Rannis and OECD, Main Science and Technology Indicators, 2010.

Table 9. **R&D personnel (full time equivalent, FTE) by sector of performance and occupation in 2009.**

		Researchers	Technicians	Support staff	Total
Business enterprises	**Total**	**1.126,3**	**322,4**	**128,4**	**1.577,1**
	Women	344,7	125,0	35,0	504,7
	Men	781,6	197,4	93,4	1.072,4
Public organisations	**Total**	**551,7**	**171,3**	**98,0**	**821,0**
	Women	221,0	88,7	33,2	342,9
	Men	330,7	82,6	64,8	478,1
Higher education	**Total**	**1.124,6**	**96,1**	**29,5**	**1.250,2**
	Women	493,3	32,3	21,7	547,3
	Men	631,3	63,8	7,8	702,9
Private non-profit	**Total**	**63,6**	**35,8**	**10,4**	**109,8**
	Women	30,3	32,5	5,9	68,7
	Men	33,3	3,3	4,5	41,1
All	**Total**	**2.866,2**	**625,6**	**266,3**	**3.758,1**
	Women	**1.089,3**	**278,5**	**95,8**	**1.463,6**
	Men	**1.776,9**	**347,1**	**170,5**	**2.294,5**

Source: Rannis.

Table 10. **R&D personnel (full time equivalent, FTE) in the Nordic countries by sector and number of researchers thereof in 2009.**

Total FTE*												
	Danm.	**%**	**Finl.**	**%**	**Iceland**	**%**	**Norway**	**%**	**Sweden**	**%**	**Total**	**%**
Business enterprises	38.153	66,7	32.237	58,1	1.577	43,3	18.166	50,3	54.285	71,7	144.418	63,3
Public research org.	1.805	3,2	6.787	12,2	816	22,4	6.270	17,4	2.605	3,4	18.283	8,0
Higher education	17.241	30,1	16.490	29,7	1.250	34,3	11.655	32,3	18.857	24,9	65.493	28,7
Total	**57.199**	**100**	**55.514**	**100**	**3.643**	**100**	**36.091**	**100**	**75.747**	**100**	**228.194**	**100**

Researchers FTE												
	Danm.	**%**	**Finl.**	**%**	**Iceland**	**%**	**Norway**	**%**	**Sweden**	**%**	**Total**	**%**
Business enterprises	21.754	61,9	23.633	58,4	1.126	40,2	12.661	48,2	29.101	62,1	88.275	58,3
Public research org.	1.302	3,7	4.505	11,1	547	19,5	4.450	16,9	1.483	3,2	12.287	8,1
Higher education	12.061	34,3	12.304	30,4	1.125	40,2	9.162	34,9	16.308	34,8	50.960	33,6
Total	**35.117**	**100**	**40.442**	**100**	**2.798**	**100**	**26.273**	**100**	**46.892**	**100**	**151.522**	**100**

* A discrepancy can found between the total amounts in tables 9 and 10. This is because table 9 includes information on FTE's in private non-profit organisations, these figures are however lacking in table 10.

Source: Rannis and OECD, Main Science and Technology Indicators, 2010.

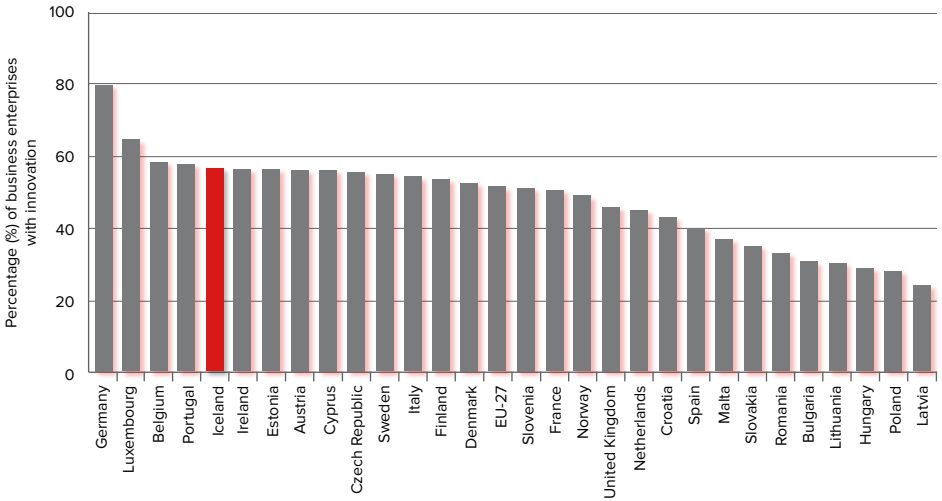
Table 11. **R&D personnel in business enterprises in the Nordic countries in 2009.**

	Denmark	Finland	Iceland	Norway	Sweden
Total number of R&D full time equivalents (FTE) in business enterprises	38.153	32.237	**1.577**	18.166	54.285
Total number of researchers FTE's in business enterprises	21.754	23.633	**1.126**	12.661	29.101
Total number of R&D full time equivalents per thousand of labour force	20,1	22,8	**22,4**	13,8	16,9
Total number of researchers FTE'S per thousand of labour force	12,3	16,6	**17,0**	10,1	10,5
Number of women as a share (%) of total number of researchers	30,2	31,4	**41,0**	35,2	35,1
Total number of R&D full time equivalents per thousand employees in business enterprises	19,7	18,8	**12,9**	10,8	18,1
Total number of researchers FTE's per thousand employees in business enterprises	11,3	13,8	**9,2**	7,5	9,7
Employment in knowledge-intensive business enterprises of total employment in all business enterprises	15,2	14,9	**18,8**	15,0	15,6
Ranking of the innovation activities of European countries	3	4	**14**	17	2

Source: OECD, Innovation Union Scoreboard, 2010.

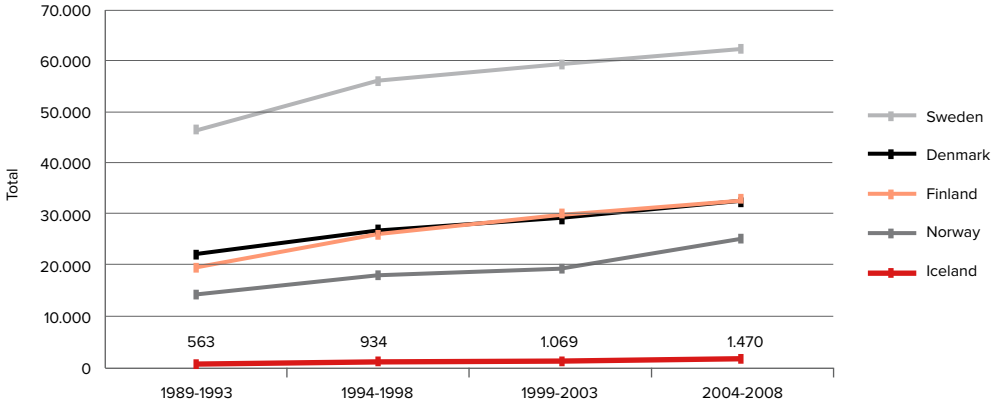
3. Innovation activities within business enterprises

Figure 10. **Percentage of European business enterprises with innovation activities in the time period**



Source: Rannis and the Community Innovation Survey, 2008.

Figure 11. **Development in total publication activity in the Nordic countries from 1989 to 2008.***

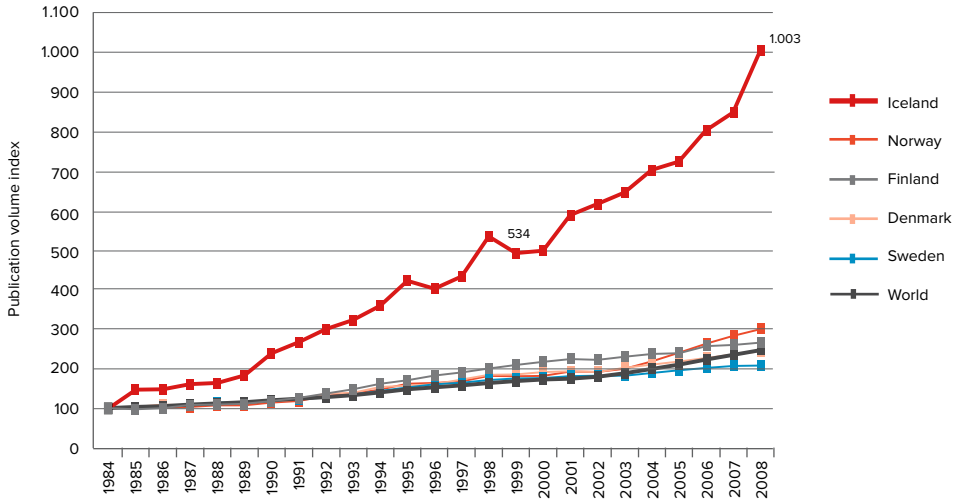


* The data is based on fractionalized counts. All the basic units (addresses) in a publication share 1 credit, and a country gets 1 fraction each time it appears in the address list. For example, in an article with 4 Swedish addresses and 1 Icelandic address, Sweden receives 4/5 and Iceland 1/5 of the credit for the article.

Source: NordForsk, 2010.

4. Outcome of research, development and innovation
4.1. Publications in peer reviewed journals

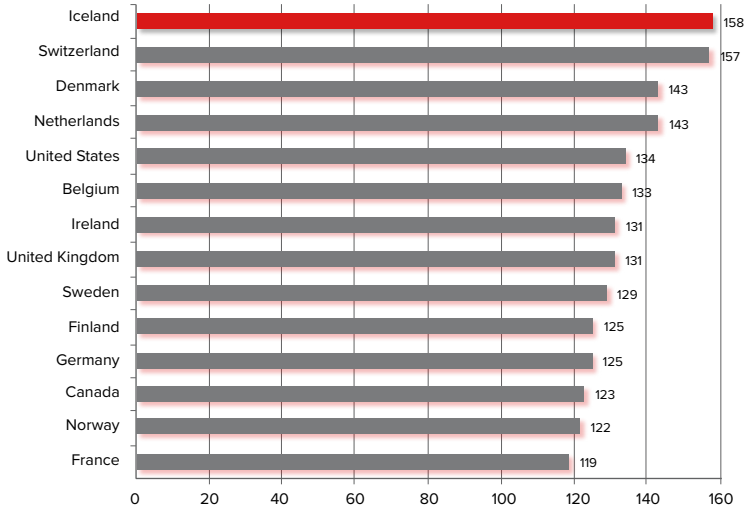
Figure 12. **Publication increase from 1984 to 2008.***



* The year 1984 = 100.

Source: NordForsk, 2010.

Figure 13. **Impact of scientific publications in selected OECD countries from 2006 to 2007.***



*World average = 100.

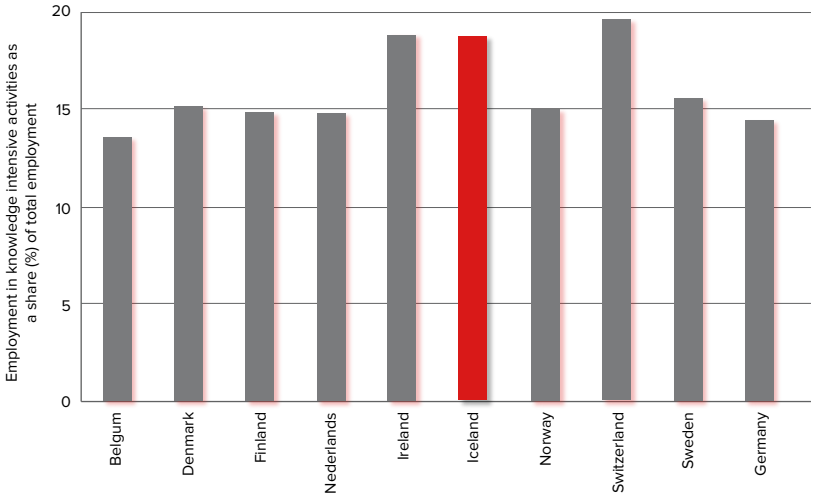
Source: NIFU STEP and National Science Indicators Thomson Reuters.

Table 12. **Number of patent applications to the European Patent Office per thousand inhabitants from 2001 to 2010.**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Belgium	14,5	15,3	16,1	17,7	21,2	20,9	21,8	21,3	18,3	21,6
Denmark	22,0	21,8	24,1	25,4	28,9	30,0	32,3	37,9	37,1	38,9
Finland	43,6	43,3	37,8	40,5	43,7	43,2	51,0	51,7	45,6	48,4
Netherlands	40,5	47,9	50,5	49,7	53,1	51,4	50,3	50,7	48,1	42,9
Ireland	9,9	10,9	10,7	10,6	11,3	13,3	13,0	15,0	15,1	15,3
Iceland	**13,7**	**13,9**	**20,4**	**15,7**	**15,2**	**19,4**	**17,3**	**21,3**	**19,1**	**22,0**
Norway	13,9	13,2	12,7	11,7	13,9	14,9	14,1	16,0	16,2	17,5
Switzerland	66,8	70,4	72,0	75,3	83,4	91,4	94,3	92,1	88,8	99,8
Sweden	44,3	39,1	35,5	38,6	39,7	43,8	47,7	53,1	45,0	45,6
Germany	32,2	32,1	33,0	34,2	35,4	37,3	39,1	40,7	37,3	40,5

Source: EPO.

Figure 14. **Employment in knowledge intensive activities in 2009.***



* Knowledge-intensive activities are defined as all ISAT industries at 2-digit level where at least 33% of employment has a higher education degree (ISCED5 og ISCED6).

Source: Innovation Union Scoreboard, 2010.