EUROPEAN COMMISSION

Brussels, 8.6.2011
SEC(2011) 739 final

31/41

COMMISSION STAFF WORKING PAPER

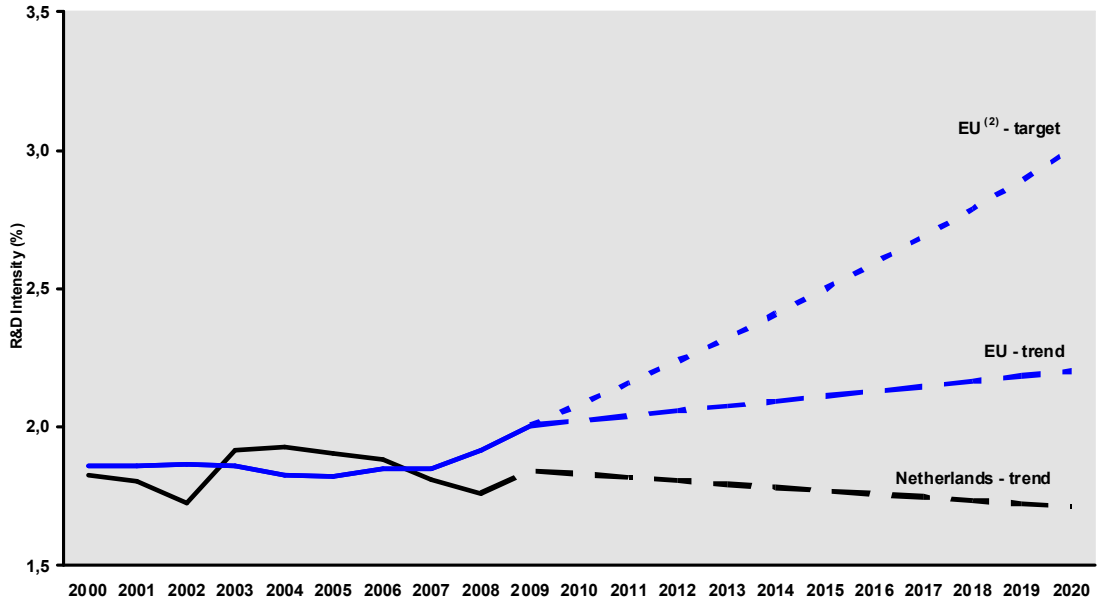
Innovation Union Competitiveness report 2011

COUNTRY PROFILE
NL - Netherlands

Progress towards meeting the Europe 2020 R&D intensity target

The national target for the Netherlands in 2010 was set to 3% by the former government. The Dutch R&D intensity was in 2009 at the same level as in 2000, particularly with a sharp decrease between 2006 and 2008 at an average annual rate of 4.31%. The decreasing trend accentuated since 2006, leading the Netherlands to perform below the EU average. In 2009 the R&D intensity amounted to 1.84%.[1] The drop in R&D intensity between 2004 and 2008 was due to a decrease in the R&D intensity of the private sector, while public R&D remained stable at around 0.96% in 2009. If the present trend continued, R&D intensity in the Netherlands would fall short of the EU average in 2020. However, the Government Agreement signed in September 2010 set down that the Netherlands aspires to be one of the top five knowledge economies worldwide. As yet no national R&D target for 2020 has been set.

Netherlands - R&D Intensity projections, 2000-2020 (1)

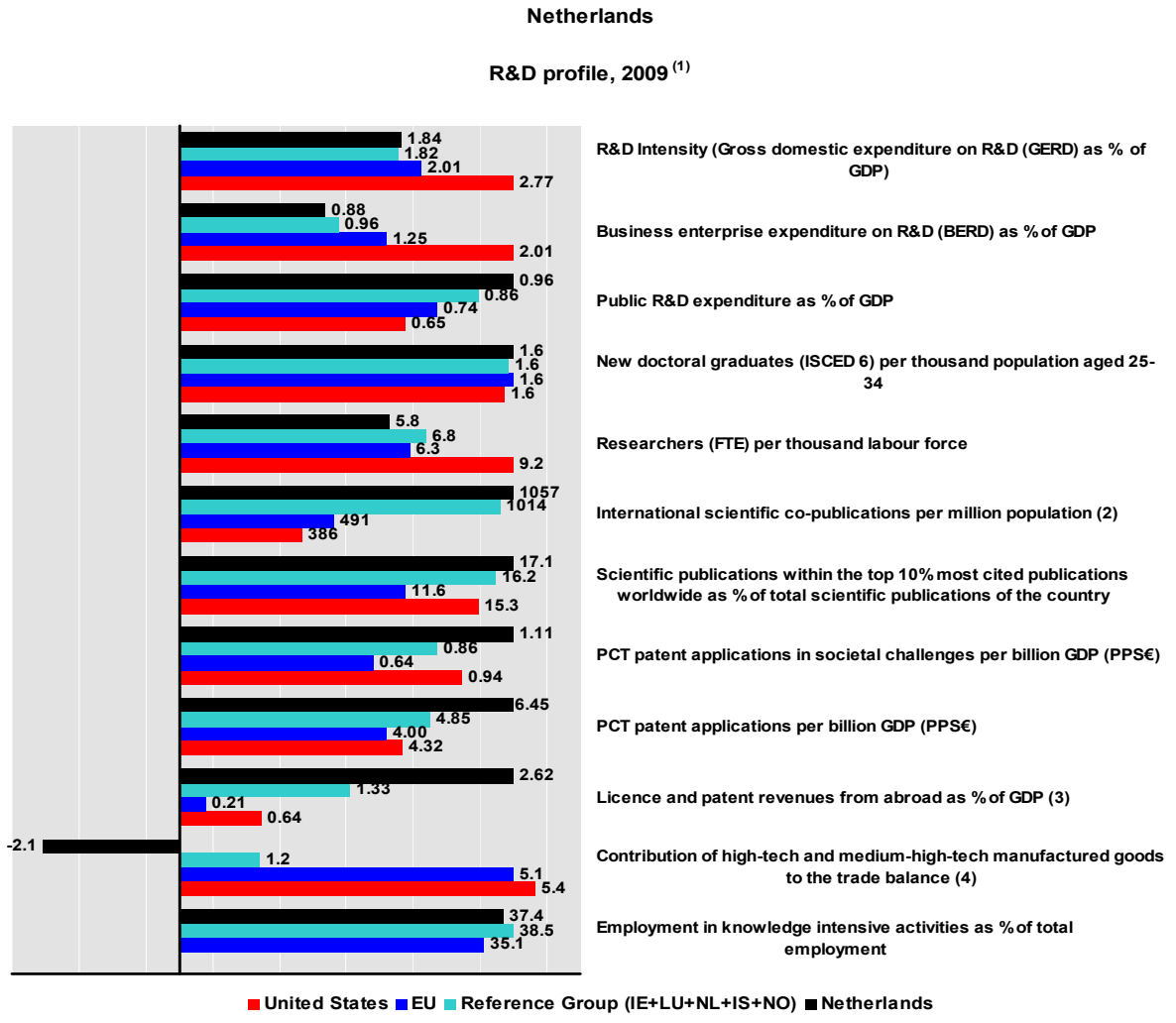


Source: DG Research and Innovation
Data: DG Research and Innovation, Eurostat
Innovation Union Competitiveness Report 2011
Notes: (1) The R&D Intensity projections based on trends are derived from the average annual growth in R&D Intensity for 2000-2009 in the the case of the EU and for 2003-2009 in the case of the Netherlands.
(2) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.
(3) NL: There is a break in series between 2003 and the previous years.

[1] Provisional data from Eurostat. National sources stipulate 1.82%.

Research and Innovation Performance

The Dutch research and innovation system presents a mixed picture with some weaknesses, especially in terms of private R&D investment, and strengths, in terms of scientific and technological output. More precisely, as previously indicated the Netherlands has a low and declining R&D intensity, 1.84% in 2009, below the EU average. The performance in human resources shows a mixed picture with researchers in the labour force below the EU average, but a higher employment in knowledge intensive activities. However, the Dutch researchers are among the most productive in the world. The Netherlands benefits from a high-quality scientific production, managing to score 17% of its publications among the top 10% most cited publications worldwide. Moreover, the Netherlands has an economy with one of the highest patent intensity in the world and performs well in patents aimed at addressing societal challenges that can constitute potential sources of future economic growth.



Source: DG Research and Innovation — Innovation Union Competitiveness report 2011

Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) The values refer to 2009 or to the latest available year.

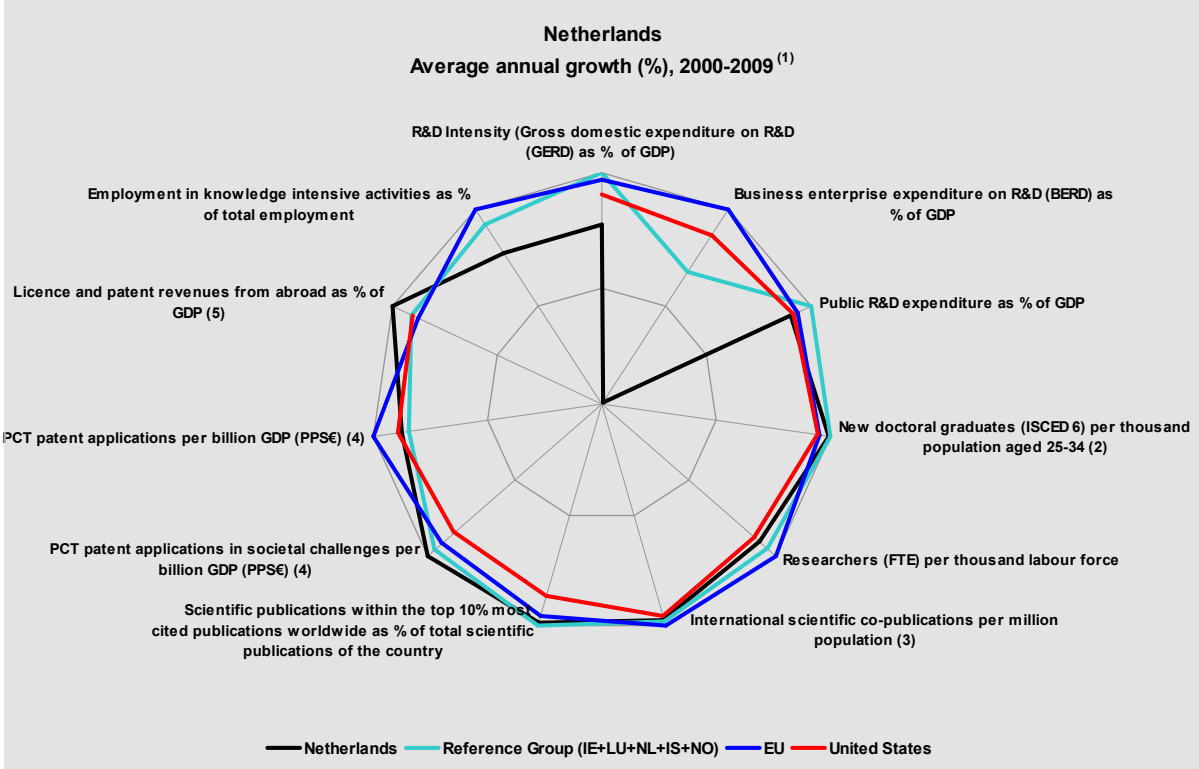
(2) (i) The EU value refers to the median rather than to the average (ii) IS and NO are not included in the Reference Group.

(3) EU refers to extra-EU.

(4) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU; (iii) IS and NO are not included in the Reference Group.

(5) Elements of estimation were involved in the compilation of the data.

From a dynamic perspective, the Dutch research and innovation system has managed to maintain its scientific and technological inventiveness capacity vis-à-vis the EU average, despite the fall in R&D intensity, especially in the private sector. This relative poor performance in R&D investments, if continued, could however jeopardise the future scientific and technological capacity of the country. The drop in the BERD percentage can be partly explained by the structure of the economy with a small high-technology sector concentrated in a few multinational companies. A policy encouraging the investment in R&I by fast growing innovative firms might be particularly adapted to counterbalance this structure and provide future sources for smart growth. As for many other Member States, the most observable effect of the crises is a severe drop in 2009 of real GDP growth rate from 1.9% in 2008 to -3.9% in 2009. In the last years, the crisis package put forward by the Dutch government have included measures with regard to R&D and innovation and particularly for leveraging greater private sector investments.



Source: DG Research and Innovation — Innovation Union Competitiveness report 2011

Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) Growth rates which do not refer to 2000-2009 refer to growth between the earliest available year and the latest available year over the period 2000-2010.

(2) LU is not included in the Reference Group.

(3) (i) The EU value refers to the median rather than to the average; (ii) IS and NO are not included in the Reference Group.

(4) Average annual growth refers to real growth.

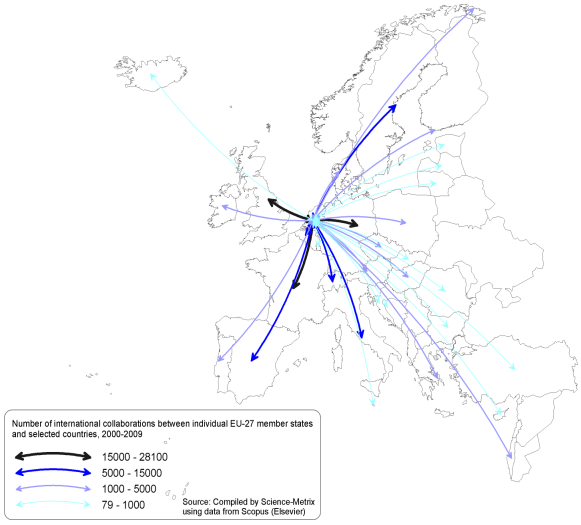
(5) EU refers to extra-EU.

(6) Elements of estimation were involved in the compilation of the data.

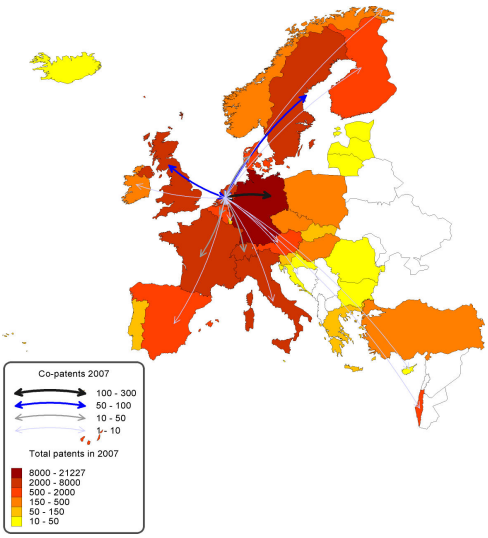
Participation in the European Research Area: Scientific and Technological collaborations

The Dutch research and innovation system is very open as reflected by the high number of scientific co-publications and co-invented patents. This openness of the system allows tapping into international knowledge flows and benefiting from strong knowledge spillovers that reflect on the high capacity of the system to produce high quality scientific publications and patents. The current data available shows that the Netherlands has strongest links in S&T cooperation with France, Germany and the United Kingdom, the three main scientific hubs in Europe, and is well connected to Spain, Denmark and Italy. In terms of co-invented patents, due to the geographical, historical, size and nature of its industry, Germany is the main technological partner, followed by the United Kingdom. An untapped potential probably exists with France, if one compares the co-invented patent applications to the co-publications between the two countries.

Co-publications between Netherlands and European countries in 2000-2009



Co-invented patent applications between Netherlands and European countries, 2007



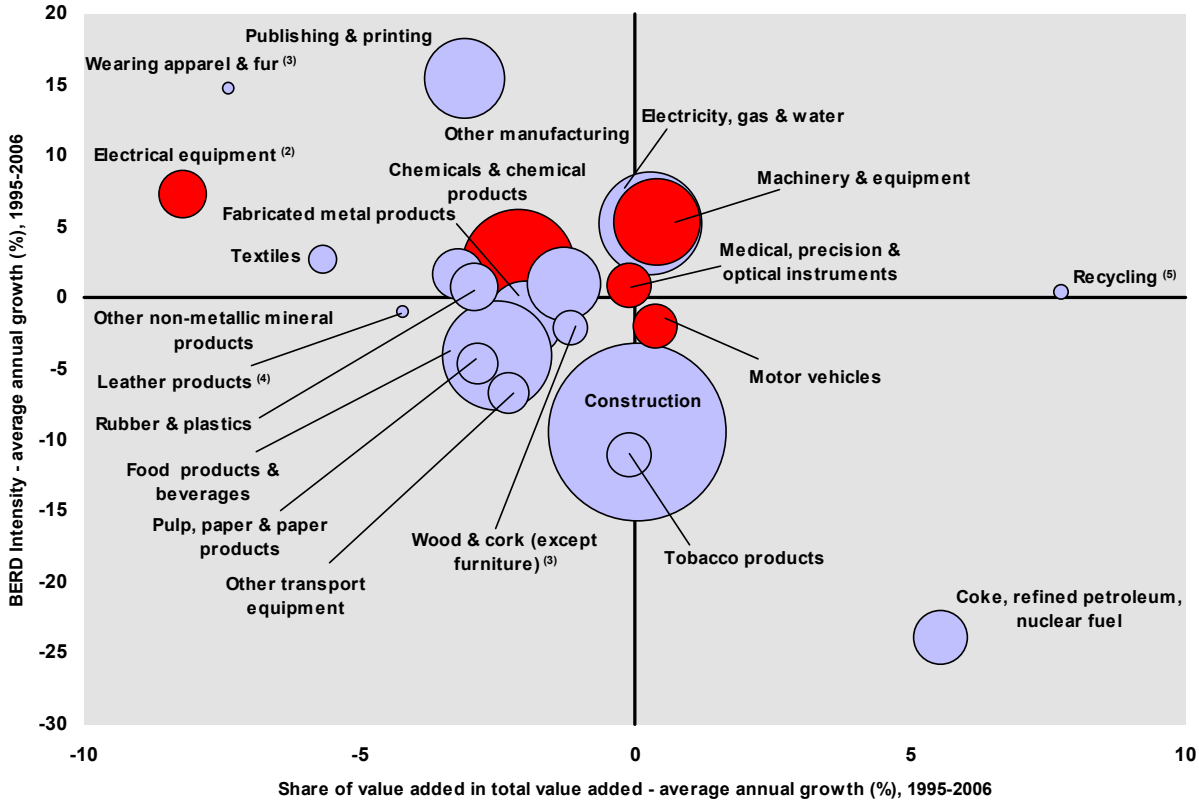
Source: DG Research and Innovation
Data: Scopus/ Science Metrix and Eurostat

Structural change towards a more knowledge-intensive economy

Creating, exploiting and commercialising new technologies have become essential in the global race for competitiveness. High-technology or 'high-tech' sectors where they are embedded in an innovative friendly economy are key drivers of economic growth, productivity and social protection, and contribute to high value added and employment.

In the last decade, private R&D intensity declined in the Netherlands, indicating a shift towards less research-oriented activities. As the graph below shows, since 1995, there have been few changes in the economic structure to move towards more research intensive sectors. In general, research intensity, measured by the research investment over the value added of the sector, has remained largely stable, but some medium-high tech and high-tech sectors, e.g. electrical equipment or chemical and chemical products, have lost importance in the overall economic structure of the country. This is to a large extent the reflection of a larger shift of the Dutch economic structure towards a higher importance of the service sector, which until now has been, in general, less R&D prone, but can be very innovative as well.

Netherlands - Share of value added versus BERD Intensity - average annual growth, 1995-2006



Source: DG Research and Innovation — Innovation Union Competitiveness report 2011

Data: OECD

Notes: (1) High-Tech and Medium-High-Tech sectors are shown in red. 'Other transport equipment' includes High-Tech, Medium-High-Tech and Medium-Low-Tech.

(2) Electrical equipment includes: 'Office, accounting and computing machinery', 'Electrical machinery and apparatus', and 'Radio, TV and communication equipment'.

(3) 'Wearing apparel and fur': average annual growth refers to 1996-2006.

(4) 'Leather products': average annual growth refers to 1996-2006.

(5) 'Recycling': average annual growth refers to 1996-2006.

(6) 'Basic metals' is not visible on the graph.

FP7 Key facts and figures

Applications:
As of 2011/03/16, a total of

- 10.314 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 14.800 applicants from Netherlands (5,55% of EU-27*) and
- requesting EUR 5.614,93m of EC contribution (6,36% of EU-27*)

Among the EU-27* Netherlands (NL) ranks:
- 6th in terms of number of applicants and
- 6th in terms of requested EC contribution

Success rates:

- The NL applicant success rate of 26,0% is higher than the EU-27* applicant success rate of 21,6%.
- The NL EC financial contribution success rate of 24,4% is higher than the EU-27* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 2.569 proposals were retained for funding (24,9%)
- involving 3.844 (26,0%) successful applicants from Netherlands and
- requesting EUR 1.369,60m (24,4%) of EC financial contribution

Among the EU-27*, Netherlands (NL) ranks:
- 2nd in terms of applicants success rate and
- 3rd in terms of EC financial contribution success rate

Signed grant agreements
As of 2011/03/16, Netherlands (NL) participates in

- 2.208 signed grant agreements
- involving 25.289 participants of which 3.306 (13,07%) are from Netherlands
- benefiting from a total of EUR 7.629,07m of EC financial contribution of which EUR 1.243,37m (16,30%) is dedicated to participants from Netherlands.

Among the EU-27* in all FP7 signed grant agreements, Netherlands (NL) ranks:
- 6th in number of participations and
- 5th in budget share

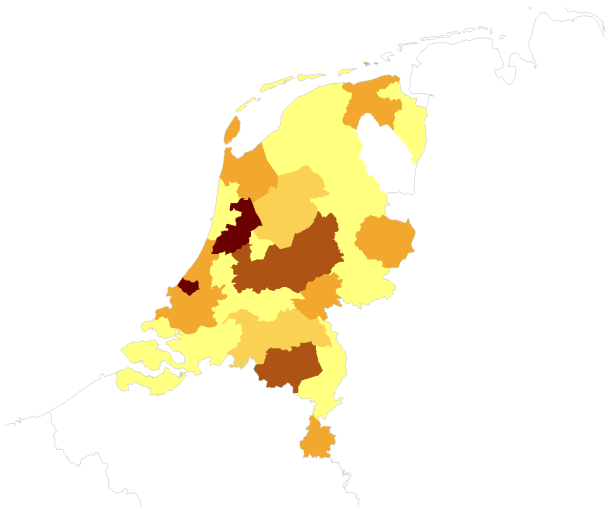
SME performance and participation

- The NL SME applicant success rate of 23,64% is higher than the EU-27* SME applicant success rate of 19,33%.
- The NL SME EC financial contribution success rate of 22,87% is higher than the corresponding EU-27* rate of 18,26%.

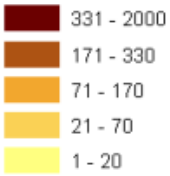
Specifically,

- 3.371 NL SME applicants requesting EUR 928,38m

**Nr. of Researchers as % of population	N/A	0,40%
Rank in EU-27* Innovation scoreboard (2008) - Above EU-27 average - Innovation Follower	- 11th	
Nr. of FP7 applicants (% EU-27*) (5,55%)	14.800 266.507	
Req. EC contribution by FP7 applicants in EUR million (% EU-27*) (6,36%)	5.614,93 88.295	
Nr. of successful FP7 applicants (% EU-27*) (6,49%)	3.844 59.199	
Req. EC contribution by successful FP7 applicants in EUR million (% EU-27*) (7,50%)	1.369,60 18.262,02	
Success rate FP7 applicants	26,0%	21,6%
Success rate FP7 EC contribution	24,4%	20,7%
Nr. of FP7 grant holders (% EU-27*) (6,45%)	3.306 51.279	
EC contribution to FP7 grant holders in EUR million (% EU-27*) (7,50%)	1.243,37 16.578,15	
Nr. of FP7 coordinators (% of grant holders) (19,21%) (18,30%)	635 9.383	
Nr. of FP7 SME grant holders (% grant holders) (14,73%) (17,25%)	487 8.845	
EC contribution to FP7 SME grant holders in EUR million (% of grant holders) (10,36%) (13,32%)	128,80 2.207,73	



- 797 (23,64%) successful SMEs requesting EUR 212,28m (22,87%)



In signed grant agreements, as of 2011/03/16,

- 487 NL SME grant holders, i.e., 14,73% of total NL participation
- EUR 128,80m, i.e., 10,36% of total NL budget share

Top 3 collaborative links with:

- DE - Germany (3.444)
- UK - United Kingdom (2.831)
- FR - France (2.258)

NL - Netherlands - most active FP7 research priority areas by number of applicants applying for the research projects						
FP7 priority area	Nr. of applicants	Requested EC contribution by applicants (M euro)	Nr. of mainlisted applicants	Success Rate (applicants)	Requested EC contribution by mainlisted applicants (M euro)	Success Rate (requested EC contribution)
Information and Communication Technologies	2.667	1.121,36	559	20,96 %	233,69	20,84 %
Marie-Curie Actions	2.304	n/a	548	23,78 %	n/a	n/a
Health	1.679	932,77	472	28,11 %	250,44	26,85 %
Environment (including Climate Change)	1.204	378,50	333	27,66 %	108,53	28,67 %
Transport (including Aeronautics)	1.122	353,35	338	30,12 %	93,31	26,41 %
Food, Agriculture and Fisheries, and Biotechnology	934	319,78	272	29,12 %	92,40	28,89 %

NL - Netherlands - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all NL grant holders	EC contribution (EUR million)	% of total EC contribution to NL
Information and Communication Technologies	565	17,09%	221,08	17,78 %
Health	432	13,07%	218,18	17,55 %
ERC	127	3,84%	187,92	15,11 %
Marie-Curie Actions	420	12,70%	107,04	8,61 %
Food, Agriculture and Fisheries, and Biotechnology	241	7,29%	82,38	6,63 %
Environment (including Climate Change)	273	8,26%	81,97	6,59 %

NL - Netherlands - participation in the FP7 research projects by organisation activity type									
Activity Type	Nr. of applicants	Requested EC contribution by applicants (M euro)	Nr. of mainlisted applicants	Success rate (applicants)	Requested EC contribution by mainlisted applicants (M euro)	Success rate (requested contribution)	Nr. of grant holders	EC contribution to grant holders	% ot total EC contribution to grant holders
HES	6.230	2.012,31	1.550	24,88%	498,74	24,78%	1.471	673,00	54,13%
PRC	3.839	1.040,65	946	24,64%	242,06	23,26%	858	213,50	17,17%
REC	2.765	1.063,69	882	31,90%	342,62	32,21%	780	311,22	25,03%
OTH	750	183,85	178	23,73%	42,98	23,38%	68	19,59	1,58%
PUB	520	113,53	180	34,62%	39,60	34,89%	129	26,06	2,10%
SME	**3.371**	**928,38**	**797**	**23,64%**	**212,28**	**22,87%**	**487**	**128,80**	**10,36%**

HES - Higher or secondary education, PRC - Private for profit (excl. education), REC - Research organisations, OTH - Others, PUB - Public body (excl. research and education),

NL - Netherlands - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
NL - Netherlands region	Number of grant holders	% of all NL - Netherlands grant holders	EC contribution (M euro)	% of total EC contribution to NL
Groot-Amsterdam (NL326)	547	16,55%	235,16	18,91%
Delft en Westland (NL333)	421	12,73%	161,87	13,02%
Veluwe (NL221)	326	9,86%	108,94	8,76%
Utrecht (NL310)	320	9,68%	123,78	9,96%
Zuidoost-Noord-Brabant (NL414)	261	7,89%	109,42	8,80%

NL - Netherlands - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	Number of Participations	% of all NL grant holders	EC contribution (M euro)	% of total EC contribution to NL grant holders
NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK - TNO	157	4,75%	68,14	5,48%
STICHTING KATHOLIEKE UNIVERSITEIT (SKU/Radboud Universi)	112	3,39%	66,85	5,38%
TECHNISCHE UNIVERSITEIT DELFT (TU Delft)	158	4,78%	63,73	5,13%
VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG (VUA)	130	3,93%	61,55	4,95%
UNIVERSITEIT UTRECHT	118	3,57%	55,53	4,47%

NOTES:
Report generated on: 2011/03/28,10:46 AM
FP7 proposal and application figures are valid as of the 2011/03/16
FP7 grant agreements and participation figures are valida as of the 2011/03/16
*EU-27 includes the 27 country-members and JRC as a separate entity
**E-STAT Reference year: 2007
**European Innovation Scoreboard is available at the website of DG Enterprise and Industry