



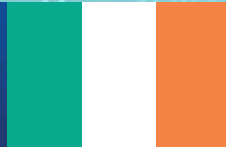
EUROPEAN
COMMISSION

European
Research Area

Ireland

Major EU achievements in science and research

2004 > 2009



Research Policy and Initiatives

As part of the **Lisbon Strategy for Growth and Jobs**, realising the **European Research Area (ERA)** has become an integral component of the EU's response to the challenges posed by globalisation. The goal is to create a true **European Single Market for Research**, where knowledge, researchers and technology can move across frontiers in the same way as goods, people, services and capital do. This is the **Fifth Freedom**; the freedom of movement of knowledge to where it is best used and exploited.

This Fifth Freedom is indispensable if Europe is to become the world's leading **'knowledge economy'**, where knowledge will help sustain prosperity and competitiveness and address the societal challenges that concern European citizens.

By bringing together the research community, industry and policy-makers, it promotes scientific excellence and addresses the fragmentation and duplication in European research that leads to wasted resources, ground lost to our global competitors and a sub-optimal impact on economic growth and job creation.

Making the ERA come true is now a unanimously agreed objective that features high on the political agenda.

In the science and research area, **the overall achievements between 2004 and 2009** have been:

- > successfully targeting funding to where it has greatest impact on EU competitiveness and scientific excellence, through efficient implementation of a new **EU Seventh Research Framework Programme** with more funding (up to €54 billion over 7 years); and
- > putting the **ERA** project at the centre of the policy agenda through a series of initiative designed to make tangible improvements in building the freedom of movement of knowledge.

Beyond these global achievements, some particular successes are worth mentioning:

- > Establishing **the ERC (European Research Council)**, which grants EU research support, beyond the traditional collaborative transnational research project on predetermined subjects, to a more innovative, science-driven 'free' research model. The ERC has been a great success – the first call for grants, in 2007 attracted over 9,000 applications;

- > Creating effective public – private technology partnerships associating enterprises and public research organisations in key areas for industrial and technological research through several large **Joint Technology Initiatives (JTIs)**. JTIs increase the scale and impact of research investment, ensure the coordination and integration of research in Europe and raise the technology content of industrial activity. Five JTIs have been launched in areas such as innovative medicines, the hydrogen economy and nanoelectronics;
- > Taking targeted steps towards a European Research Area and the better coordination of national and EU efforts, by launching initiatives to promote **mobility of researchers, joint programming of public research, cross-border investment in large infrastructures and better exploitation of research results**. Member States have adopted a joint vision for ERA in 2020 with the right conditions for governance for research and investment in R&D. Member States will report on their progress in investing in R&D through their respective National Reform Programmes;
- > Improving the focus of **thematically-oriented European research on societal and long-term business needs** and maximising the European added value of our support; We have focussed even more intensively, through policy, innovation, organisation and funding on how we can better deal with the major societal issues, such as Alzheimer's, energy security, climate change or food security.
- > **Opening European research to the world** by adopting a resolutely international dimension, both in the implementation of the Framework Programme and in partnership with Member States. Global challenges need global cooperation and the achievements over the last five years have encompassed new scientific and technological agreements with our neighbours, both global and local.
- > **Raising the average level of research in Europe**, through specific actions promoting the **regional dimension of research** and supporting the development of **research capacities** in the enlarged EU. 26 out of the 27 Member States now have set their own research intensity targets and R&D expenditure increased with growth in real terms in all Member States. The Lisbon Strategy for growth and jobs has also resulted in a higher proportion of the **Regional Policy Funds** being earmarked for R&D and innovation. The EIB and the EC have joined forces to develop a new funding instrument for the knowledge economy: the **Risk Sharing Finance Facility**, freeing up some €10 billion for investments in research development and innovation.
- > **Rationalising and simplifying rules and practices for beneficiaries of FP7** and programme management and by using research money even better. Outsourcing of many management tasks to the **Research Executive Agency** will help the Commission to manage increasing budgets with existing human resources, while focusing more on policy development.
- > Consolidating the **Joint Research Centre**, the EU's own research centre, as a provider of robust, independent scientific and technical support for EU policies.

Ireland and FP6 (2002-2006)

Framework Programmes (FP) are the EU's main method of research funding in Europe. The Sixth Framework Programme for Research (FP6), which ran between 2002 and 2006, supported about **200 million Euros of Irish research**.

Irish researchers were particularly successful in getting funding for research training, career development and mobility schemes, through the 'Human resources and mobility' parts (which are also known as 'Marie Curie Actions') of the programme 'Structuring the European Research Area (ERA)'. Here, 162 Irish research participants received more than 54 million Euros.

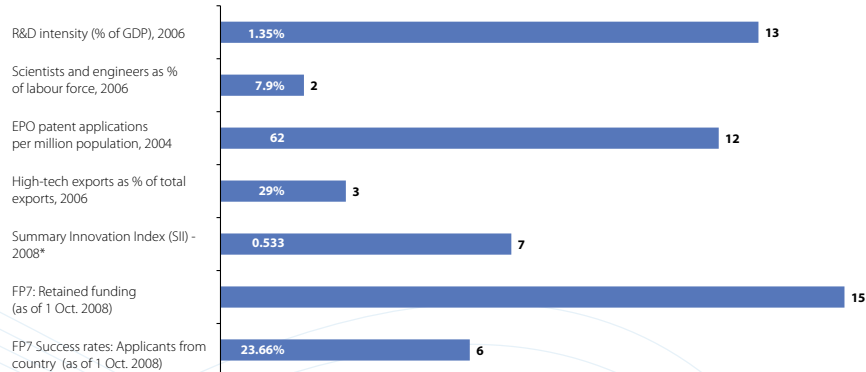
Elsewhere, Ireland was also successful in areas such as '**Information Society Technologies**' (over 42 million Euros); '**Nanotechnology and Nanosciences**' (nearly 21 million Euros); and '**Sustainable Development, Global Change and Ecosystems**' (17 million Euros).

Irish organisations were also active in coordinating and participating in projects under FP6. Some 891 Irish organisations were involved in 715 projects; 175 of these were led by Irish organisations.

(N.B. Please remember that the figures quoted are commitments, not payments)

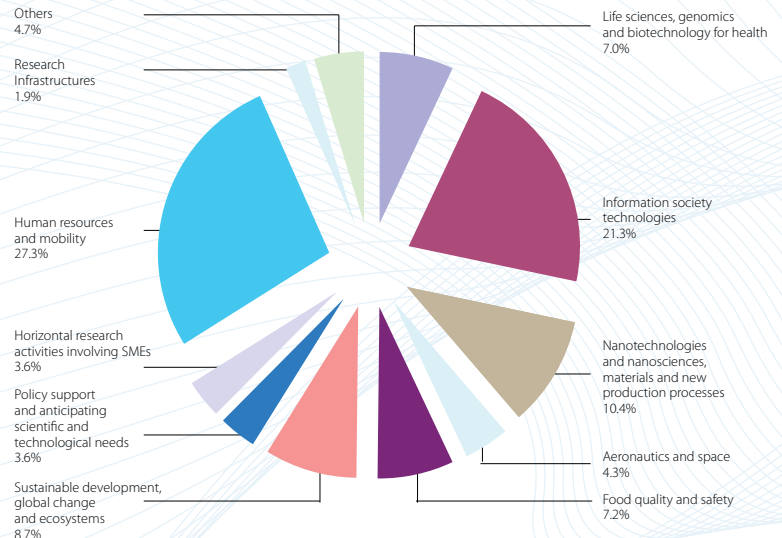
Ireland: Classification in EU-27

(Legend: IE ranks 3rd for high-tech exports, and 6th for FP7 Success rate within the EU-27 countries)



* The SII gives an overview of aggregate national innovation performance Sources: Science, Technology and Competitiveness key figures report 2008/2009, European Innovation Scoreboard 2007 and DG RTD.

FP6 signed contracts: EC contribution by priority area (as of May 2008)



Ireland and FP7 (2007-2013)

The Seventh Framework Programme for research and technological development (FP7) will operate between 2007 and 2013. By October 2008, Irish research organisations had secured EC contributions of around **42 million Euros** through FP7.

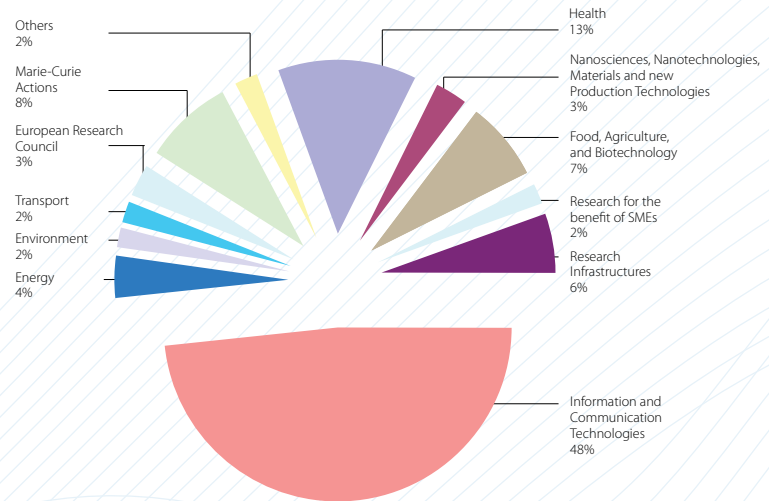
Irish research organisations are particularly successful in the following areas of research: **'Information and Communication Technologies'** (20 million Euros), **'Health'** (over 5 million Euros), and **'Food, Agriculture, and Biotechnology'** (over 3 million Euros).

Also, they secured significant funding through **'Marie Curie Actions'** for research training, career development and researcher mobility schemes (over 3 million Euros), and **'Research Infrastructures'**, which optimise the use and development of the best and existing research infrastructures in Europe (over 2 million Euros).

The Irish are the lead coordinators in 23 FP7 projects and over 160 Irish organisations are involved in 139 projects.

(N.B. Please remember that the figures quoted are commitments, not payments)

FP7 Signed Contracts :
EC Contribution by Priority Area (as of October 2008)



Research and innovation in the Regional Policy (2007-2013)

Regional development is essential to increase research capacity throughout the EU. Ireland benefits from this kind of support for research under the **'Regional Competitiveness and Employment'** objective, funded by the European Regional Development Fund (ERDF). **Several programmes under this objective have targeted research among their priorities. These include:**

- > The **'Southern and Eastern Regional Operational Programme 2007-2013'**, which targets **Innovation and the Knowledge Economy** as a priority. It will receive 94 million Euros of EU funding over this period.
- > The 'Border, Midland and Western' region programme, targeting **'Innovation, Information and Communication Technologies (ICT) and Knowledge Economy'**, which will receive over 80 million Euros of EC funding.

The **'European Territorial Cooperation' objective** gives significant support to research and innovation as well. Several programmes operating between Ireland's cross-border regions are co-funded by the European Regional Development Fund (ERDF).

Ireland: a key actor of European research

Irish organisations remain actively involved in the Framework Programmes, as coordinators or participants in successful projects, for example:

- > Three Irish organisations participated in the **SEAFOODplus** project: the **National University of Ireland – Dublin, Teagasc** (Agriculture and Food Development Authority) and **University College Cork**. This collaboration brings together 68 research organizations from 17 countries. This “star” project advocates eating seafood for better health. SEAFOODplus aims to change consumers’ ideas about fish, and reduce the risks of seafood poisoning.
- > The **University College Cork** participates in **SPICOSA**. The objective of this revolutionary project is to develop a self-evolving, holistic research approach for integrated assessment of Coastal Systems. SPICOSA mobilizes the the best available scientific knowledge with the aim of integrating science and policy making better. Cork Harbour is one of the 18 study sites where the project will be run.
- > Supported by a **Marie Curie** mobility grant, **researchers from Ireland (University College Dublin)** and the UK have found that a lethal fungus, *Aspergillus fumigatus*, reproduces sexually. This pathogen causes death in 50% of infected immune-deficient patients. These findings represent a major breakthrough in the understanding of the so-called fungus, and hope for those who become exposed to it.
- > **The School of Chemical and Bioprocess Engineering (University College Dublin)** coordinates the **FUSION** project. Bringing together leading international researchers from a wide range of disciplines, FUSION aims to develop high-temperature gas separation membranes, based on newly emerging porous inorganic materials. Taking the case of the separation of CO₂/Air as an example, the successful removal of CO₂ from gas streams has, not only, huge commercial implications in the production of a purified CO₂ gas stream as a product or raw material, but also very significant environmental ramifications, particularly in the light of EU obligations under the Kyoto Protocol.
- > The **HILAS** project is coordinated by the **Aerospace Psychology Research Group at Trinity College Dublin**. The objective of HILAS is to develop a model to make aviation safer. Human error currently contributes to 80% of all accidents involving commercial aircraft. Therefore, HILAS will help improve air safety, through changes in aviation technology and operating systems, aimed at designing-out, preventing and better managing the consequences of human error. Three other Irish companies are also involved in HILAS: **SR Technics Ireland LTD, Shevlin Technologies LTD and Aircraft Management Technologies LTD**.

- > Interest in exploiting the biological, energy and mineral resources of the deep seas is growing. Using cutting edge technologies, the **HERMES** (Hotspot Ecosystem Research on the Margins of European Seas) project team is discovering new seafloor features and boosting our understanding of this hidden world. Scientists from 18 countries (including the **National University of Ireland, Galway**) communicate their findings to policy makers to ensure decisions regarding the management of our marine resources can be taken on the basis of the very latest scientific evidence.
- > The **RENEW** project set out to assess various methods of biomass fuel production and Europe's potential to produce biomass material. The research team, which included the **National University of Ireland, Dublin**, concluded that synthetic BtL fuels (a type of biofuel made from lingo-cellulosic biomass such as wood, straw and energy plants) could have a substantial effect on reducing emissions from transport. The project has provided a solid foundation for further development of the next generation of biofuels.
- > By working together, the project partners of **NaPa** (Emerging Nanopatterning Methods) have created a vibrant, united nanopatterning research community in Europe. Nano-structured patterns have a very visible impact in a wide range of fields, including security, biotechnology and medicine. In electronics, for example, advances in nanopatterning are key to reducing the size of transistors in microchips, making them faster and more powerful. The project's partners, including **University College Cork**, developed new materials and tools, filed several patents and founded three spin-off companies.
- > The **NEWCOM** (New Communities and Mental Health? A Needs Analysis) project is an example of good practice in community led research in the 'Science Shop' tradition. The **Dublin City University** and the Queen's University Belfast investigated mental health needs amongst migrants in Ireland. This community driven perspective will be used to inform the development and implementation of policy and practice in the field of mental health.
- > 13 partners from 10 countries (Ireland is represented by the **University of Limerick**) aim to develop and extend an international radio research network (**IREN**) that seeks to develop and establish durable EU collaboration in the field of academic radio research. Expected outcomes are a programme of collaborative, interdisciplinary and complementary research; an internet site with online publication of a data base and a 'Handbook of Radio Systems in Europe'; a formal constitution of IREN as an association with European legal status; recruitment of a wider membership of the associations and contacts with the European broadcasting organisations and industries.

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