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|---|----------------|-----------|
| JPI Partner, EU Member State | Ireland | IE |
| Total declared Water RDI Funding: 8.9 ¹ M €/yr | | |

[The Environmental Protection Agency \(EPA\)](#) is an independent public body. Its mission is to promote and implement the highest practicable standards of environmental protection and management that embrace the principles of sustainable and balanced development. The main responsibilities of the EPA include:

- Monitoring and reporting on quality of environment;
- License and regulation of industries, waste disposal operations and large fuel storage installations;
- Implementation and enforcement of regulations on the use and release of GMOs; and
- Funding & co-ordination of environmental research.

Through its research programme [STRIVE Research Programme 2007-2013](#) (now EPA Research Programme 2014-2020), the EPA has provided approximately €100m funding for environmental research and development to colleges, research organisations and private companies over the period 2007-2013. Research is funded under three main areas: Climate Change, Water and Sustainability. The Water Research is mainly policy-driven. The previous research programme was the ERTDI Programme 2000-2006 with an EPA Research Commitments of €55m. The EPA has participated in a number of ERA-Net projects. These include: SKEP (FP6), ENVHEALTH ERA net (FP7), CIRCLE2 (FP7), CIRCLE (FP6), ECO-INNOVERAnet (FP7), WatEUr CSA (FP7) and JPI Climate CSA (FP7) The EPA is also involved in the JPI Connecting Climate Knowledge for Europe (CliK'EU). The EPA is the National Contact Point and National Delegate for FP7-Environment and since 2014 Horizon 2020 Societal Challenge 5.

The [Irish Research Council \(IRC\)](#) (previously Irish Research Council for Science, Engineering & Technology (IRCSET)) operates multi-million euro research funding initiatives which support talented researchers in their early stage career formation across Masters, Doctoral and Postdoctoral levels in the sciences, engineering and technology. The emphasis of the funding programmes is on exploratory research aimed at yielding new concepts, findings and innovations within Ireland. IRCSET runs several research programmes, which are looking at basic research and development in science, engineering and technology; and are not only limited to Water-related research activities. These programmes are driven by research interests and existing knowledge base of applicant pool of graduates and provide funding towards research projects:

- *Embark Initiative* (Total Budget of Programme: 120 M€ since 01/12/2001);
- *Empower Initiative*: (Total Budget of Programme: 15 M€ since 01/12/2002);
- *Inspire Initiative*: (Total Budget of Programme: 10.2 M€ for the period: 01/09/2009 – 31/12/2012).

In addition, IRCSET is involved a number of activities at European level, including European Research Area Networks (ERA-NETs) and the European Science Foundation.

[Science Foundation Ireland \(SFI\)](#) was formally established in 2003 under the Industrial Development (Science Foundation Ireland) Act. SFI's current legal remit is to promote, develop and assist the carrying out of oriented basic and applied research in strategic areas of scientific endeavour (including those identified in the report of the National Research Prioritisation Steering Group) that concern the future development and competitiveness of industry and enterprise in the State. As outlined in SFI's Strategic Plan, Agenda 2020, the Foundation is committed to continuing its focus on funding excellent science that will deliver strongly on impact, thus realising significant benefits for the Irish economy and Irish society. In this regard, SFI's strategy has four primary objectives:

¹ Surveyed funding in 2010 (http://www.waterjpi.eu/images/documents/Water_JPI_Maturity_Template_20110420.pdf)

- To be the best science funding agency in the world at creating impact from excellent research and demonstrating clear value for money invested
- To be exemplar in building partnerships that fund excellent science and drive it out into the market and society
- To have the most engaged and scientifically informed public
- To represent the ideal modern public service organisation, staffed in a lean and flexible manner, with efficient and effective management

Activities in support of delivering against these objectives are being realised and can be broadly described under the following areas:

- The establishment of major partnerships with industry, charities, national and international funding bodies e.g. Pfizer, Irish Cancer Society, Department for Learning, Education and Innovation in Northern Ireland, and the Royal Society in the UK, and the continuance of awards made under existent schemes with the [Wellcome Trust \(UK\)](#) and the [US-Ireland R&D Partnership Programme](#);
- The development of a set of world-leading, large scale research centres that will provide major economic impact for Ireland (12 SFI Research Centres funded to date) and their continued support through the SFI Spokes programme;
- The Industry Fellowship Programme to facilitate exchanges between academia and industry to stimulate excellence through knowledge transfer and training;
- The support and development of excellent early career researchers with the allocation of over €20 million in funding to 40 early career researchers through the SFI Starting Investigator Research Grant (SIRG) and Career Development Awards (CDA); continued support of research excellence under the President of Ireland Young Researcher Award (PIYRA) and SFI Research Professorship programmes;
- The implementation of a number of initiatives to encourage and support SFI's research community in maximising their drawdown of H2020 funding; and
- The participation in a €5.5 million transnational call for Biomarkers in Nutrition and Health through the EU Joint Programming Initiative 'A Healthy Diet for a Healthy Life' and partnering with 11 countries in the Systems Medicine ERANET COFUND application to Horizon 2020

Finally, SFI recognises that the awareness, support and understanding of the public of developments and research in STEM have become increasingly important. The SFI Discover Programme Call supports and develops the STEM education and public engagement sector in Ireland by investing in capacity in this area and by exploring and encouraging novel means of public engagement and communications

Enterprise Ireland is the Government agency in Ireland responsible for supporting Irish businesses in the manufacturing and internationally traded service sectors. Specifically, Enterprise Ireland helps businesses to start-up, innovate and ultimately, to achieve global success. Via its *Commercialisation fund - Proof of Concept & Technology Development*, it funds water-related research and other areas including ICT, Life-Sciences, Bio and Industrial Technologies. Other priorities of the programme include product development. It is providing funding toward applied research. Its annual budget is of approximately €10 million per annum (varying). This is a national fund only providing funding for Demonstration & Research projects to Universities & Research Institutions. The previous relevant programme was ATRP - Advanced Technology Research programme. Enterprise Ireland has a role on several ERA-nets across Europe of strategic importance.

The Department of Agriculture, Food and the Marine (DAFM) is a Government Department, which administers three competitive research programmes: Food Institutional Research Measure (FIRM), Research Stimulus Fund (RSF) and COFORD (Competitive Forest Research for Development). The *Research Stimulus Fund (RSF)* covers water-related research as well as Climate change, Agri-Economy, Animal Biosciences, Plant Biosciences related activities. It provides funding for research projects to Universities & Research Institutions. DAFF is leading Ireland's involvement in the Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE). It is also involved in "A healthy

diet for a Healthy life" JPI and a number of ERA-Nets including Wood Wisdom and Core Organic. The RSF total budget is estimated at 43.5 M€ since 2005.

The Geological Survey of Ireland (GSI), Department of Communications, Energy and Natural Resources (DCENR), is Ireland's National Earth Science Agency. It is responsible for providing geological advice and information, and for the acquisition of data for this purpose. GSI produces a range of products including maps, reports and databases. The *Griffith Geoscience Research Award Programme* provides funding towards water-related research activities and also towards marine and coastal, petroleum, geophysics related research. It is mainly driven by the WFD and aims at developing models for the behaviour of groundwater, including the impacts of climate change and intensifying infrastructure on future groundwater supplies. It provides funding for research projects to Universities & Research Institutions. Its total budget is of about 10 M€ since 01/06/2007.

The [Marine Institute](#) is the national agency responsible for Marine Research, Technology Development and Innovation (RTDI) with the following role: "to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to research and development that, in the opinion of the Institute, will promote economic development and create employment and protect the marine environment". Via its *Marine Research Sub-Programme (National Development Plan 2007-2013)*, it funds research related to Water (e.g. Advanced Marine Technologies (with freshwater applications); Freshwater catchment management - in relation to management of migratory fish species (salmon & eel) and their habitats) and Marine-related research activities. It provides funding to Universities, Research Institutions and Private Sector towards Demonstration, Dissemination and Research projects. It is policy-driven (Water Framework Directive Marine Strategy Framework Directive Habitats & Birds Directives) and the Marine Institute is a partner on the SEAS-ERA (Era-Net) Project, inputting (via DAFF) into the Food & Health JPI and inputting directly into the Oceans JPI.

[Teagasc](#) is the agriculture and food development authority in Ireland. Its mission is to support science-based innovation in the agri-food sector and the broader bioeconomy that will underpin profitability, competitiveness and sustainability. Via the *Teagasc Walsh Fellowship Scheme*, it funds research in relation to Crops, Environment and Land Use Research; Grassland and Animal Research; Rural Economics and Development Research; Food Research. The main drivers of its water –related research activities are the Nitrates Directive and National Nitrates Action Plan; Water Framework Directive and River Basin District Management Plans; Habitat Directive and National Biodiversity Plan. The annual budget for this programme is of: € 2.4 million per annum. Teagasc is involved in the JPI on Agriculture, food security and climate change; FP7, INTERREG and COST projects. It is the Irish Representative to European Soil Bureau Network (JRC).

The [Office of Public Works \(OPW\)](#) is the lead State body in Ireland for Flood Risk Management. It has a number of important roles including co-ordinating activities of Government Departments, Local Authorities and other bodies and managing the implementation of the national flood risk management policy. The Government decided in late 2008 to transfer the Coastal Zone Management Division from the Department of Agriculture, Fisheries & Food to the OPW. Via its *Flood Studies Update Programme 2005-2012* aims at producing methodologies for the estimation of design Flows and Design Rainfall. Its total budget is €2 million for the FULL Programme towards Dissemination & Research projects awarded to Universities, Research Institutions & Private Sector. The OPW is actively involved in the ERA-Net CRUE second funding initiative for collaborative research projects.

Table on major RDI Funding Institutions¹

| Funder Name | Ministry | Programme | Water Programme name (if any) | Target: Research / Innovation | Bottom-up / Top-down | Annual RDI Water Funding (M€) |
|--|----------|--|-------------------------------|--|----------------------|-------------------------------|
| Environmental Protection Agency | | STRIVE Research programme 2007-2013 EPA Research Programme 2014-2020 | Water Research Pillar | Research, Innovation & small-amount of Demonstration | Mostly Top down | 2.012 |
| Irish Research Council (IRC) (previously Irish Research Council for Science, Engineering & Technology (IRCSET)) | | <ul style="list-style-type: none"> • Embark Initiative • Empower Initiative: • Inspire Initiative | | Research & Innovation | Mostly Bottom-up | |
| Science Foundation Ireland (SFI) | | Research Frontiers & Principal Investigator Programmes | | Research & Innovation | Mostly Bottom-up | |
| Enterprise Ireland (EI) | | Commercialisation fund - Proof of Concept & Technology Development | | Demonstration & Research | | |
| Department of Agriculture, Food and the Marine (DAFM) | | Marine Research Sub-Programme (National Development Plan 2007-2013 Stimulus | | Research & Innovation | Mostly Top down | 0.08 |
| Teagasc | | Teagasc Walsh Fellowship Scheme | | Research, Innovation & small-amount of Demonstration | Mostly Top down | |
| Office of Public Works (OPW) | | Flood Studies Update Programme 2005-2012 | | Dissemination & Research projects | | |
| Geological Survey of Ireland | | Griffith Geoscience Research Award Programme | | Research & Innovation | | |

¹ Over the period 2007-2013.

Table with publications and patents data

| Indicator ¹ | SRIA theme | Publications | | Patents | |
|--|------------|---------------------------|---------------------|---------|--------|
| | | Ireland | Europe ² | Ireland | Europe |
| Raw data | Q1 | 294 | 33531 | 0 | 59 |
| | Q2 | 373 | 37391 | 7 | 855 |
| | Q3 | 1306 | 134254 | 8 | 759 |
| | Q4 | 103 | 15957 | 1 | 184 |
| | Q5 | 167 | 22514 | 2 | 329 |
| | ALL | 1396 | 142901 | 15 | 2256 |
| Increasing rate ³ | | 3.2 | 2.1 | 1.3 | 1.3 |
| Patens per 1,000 publications | | IE: 10.66 ; Europe: 15.78 | | | |
| Standardized by population ⁴ (10 ⁶ Inhabitants) | Q1 | 64.0 | 53.7 | 0.0 | 0.0 |
| | Q2 | 81.2 | 59.9 | 1.6 | 1.4 |
| | Q3 | 284.3 | 215.0 | 1.6 | 1.2 |
| | Q4 | 22.4 | 25.5 | 0.2 | 0.3 |
| | Q5 | 36.4 | 36.0 | 0.5 | 0.5 |
| | ALL | 303.9 | 228.8 | 3.2 | 3.6 |
| Standardized by GDP ⁵ (100 × 10 ³ M EUR) | Q1 | 182.8 | 229.3 | 0.0 | 0.4 |
| | Q2 | 231.9 | 255.7 | 4.6 | 5.8 |
| | Q3 | 811.9 | 918.1 | 4.7 | 5.2 |
| | Q4 | 64.0 | 109.1 | 0.5 | 1.3 |
| | Q5 | 103.8 | 154.0 | 1.5 | 2.2 |
| | ALL | 867.9 | 977.2 | 9.3 | 15.4 |

¹ All data correspond to the period 1999 - 2013.

² Considered as the 28 EU Member States plus the 12 Associated Countries.

³ Increasing Rate is the number of publications or patens in 2009-2013 divided by the number in 1999-2003 (considering ALL water topics).

⁴ Population obtained from http://en.wikipedia.org/wiki/List_of_countries_by_population.

⁵ Gross Domestic Product (GDP), nominal, obtained from http://en.wikipedia.org/wiki/List_of_countries_by_GDP_%28nominal%29

Tables on Funders and Performers obtained from publications analyses

| SRIA theme | Funding Institutions | Acronym | Intensity of citations |
|------------|---|---------|------------------------|
| Q1 | ENVIRONMENTAL PROTECTION AGENCY OF IRELAND | IEEPA | 100 |
| | MARINE INSTITUTE OF IRELAND | | 60 |
| Q2 | SCIENCE FOUNDATION IRELAND | SFI | 100 |
| | ENVIRONMENTAL PROTECTION AGENCY OF IRELAND | IEEPA | 84 |
| Q3 | SCIENCE FOUNDATION IRELAND | SFI | 100 |
| | ENVIRONMENTAL PROTECTION AGENCY OF IRELAND | IEEPA | 64 |
| Q4 | AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY | TEAGASC | 100 |
| | IRISH DEPARTMENT OF AGRICULTURE FOOD AND THE MARINE | | 67 |
| Q5 | ENVIRONMENTAL PROTECTION AGENCY OF IRELAND | IEEPA | 100 |
| | IRISH DEPARTMENT OF AGRICULTURE FOOD AND THE MARINE | | 100 |
| ALL | SCIENCE FOUNDATION IRELAND | SFI | 100 |
| | ENVIRONMENTAL PROTECTION AGENCY OF IRELAND | IEEPA | 56 |

| SRIA theme | Performing Institutions | Intensity of citations |
|------------|---|------------------------|
| Q1 | TRINITY COLLEGE DUBLIN | 100 |
| | UNIVERSITY COLLEGE DUBLIN | 97 |
| Q2 | UNIVERSITY COLLEGE DUBLIN | 100 |
| | NATIONAL UNIVERSITY OF IRELAND NUI GALWAY | 64 |
| Q3 | UNIVERSITY COLLEGE DUBLIN | 100 |
| | NATIONAL UNIVERSITY OF IRELAND NUI GALWAY | 78 |
| Q4 | TEAGASC | 100 |
| | UNIVERSITY COLLEGE DUBLIN | 82 |
| Q5 | UNIVERSITY COLLEGE DUBLIN | 100 |
| | UNIVERSITY COLLEGE CORK | 82 |
| ALL | UNIVERSITY COLLEGE DUBLIN | 100 |
| | UNIVERSITY COLLEGE CORK | 82 |