

Spain

JPI Partner, EU Member State

Total declared Water RDI Funding: 51¹ M€/yr

<u>MINECO</u> implements government policy for research and innovation through the Secretariat of State for Research, Development and Innovation. MINECO is the main governmental funding body for research and innovation, owns and manages the "State Plan for Research, Development and Innovation" to promote high-quality scientific research, training and career development in science and technology, supports centres of excellence, research infrastructures, technology transfer, innovation and science dissemination. Two Directorate Generals are directly related to this JPI, covering the areas of Research and Innovation and one public Innovation Agency (CDTI).

With a total budget for RDI activities of 430 M€ in 2013, the mission of the Directorate General for Scientific and Technological Research is to coordinate and finance high-quality research in the full spectrum of scientific and technological disciplines and support researchers' training and research carriers, as well as research infrastructures. This Directorate General also promotes the internationalization of Spanish research through a number of bilateral and multilateral programmes.

Directorate General for Innovation and CDTI are responsible for the promotion of technology development and innovation in the private sector, public-private partnerships, technology transfer, and large national infrastructures.

Within the State Plan for Research, Development and Innovation water research is mainly funded through the following National Programmes:

- State Plan Promoting Excellence in Scientific and Technological Research
- State Plan on RDI Oriented Towards Societal Challenges, aligned with H2020 Societal Challenges
- State Plan Promoting RDI Business Leadership

There is not a specific programme for water RDI, but water issues are funded through both programmes. Other Programmes related to Innovation, applied research or International activities devote additional funds to water issues.

MINECO supports basic, strategic and applied research on Water Science and Technology through annual competitive bottom-up calls. These calls will be coordinated with the Cofunded EC Calls and with other Joint Calls of the Water JPI.

The National Plan has always represented the major opportunity for RTD funding at the National level, although in the last 20 years the research funding capacity of the regional governments has increased.

Regional governments within Spain have a significant capacity to fund research and innovation. Regional research funding programmes often selected and funded research and innovation proposals. In the last years, a number of these programmes have evolved to provide basal funding to outstanding research groups or institutes. Regional programmes on water are not known, and the funding capacity of these programmes is much smaller than that of the National Plan.

Ministry of Agriculture, Food and Environment (<u>MAGRAMA</u>) is responsible for water policy, plans and programmes devoted to water resources evaluation and planning, water quality, sustainable irrigation management, floods, and related issues in the context of the Water Framework Directive. Their capacity to fund research and innovation has been traditionally smaller than that of MINECO. The new Multiannual Financial Framework of the European Union (2014-2020) has increased their responsibilities in the innovation domain.

¹ It includes Water Funding on projects, infraestructures, training and mobility.



Table on major RDI Funding Institutions

| Funder Name | Ministry | Programme | Water Programme name (if any) | Target: Research / Innovation | Bottom- up / Top- down | Annual RDI Water Funding (M€) |
|--|---|--|--|-------------------------------------|---------------------------------|---|
| Ministry of Economy and Competitiveness | MINECO | State Plan for RDI: Promoting Excellence in STR RDI Oriented towards Societal Challenges | No | | | |
| | DG Research | RDI projects: Other (training, mobility, infrastructures, international cooperation): | | Research | Both | 16 |
| | DG Innovation | - RDI projects: | | Innovation | Both | 10 |
| INIA, National Institute for Agri-food Research | Ministry of Economy and Competitiven ess | State Plan for RDI: RDI projects: Other (training, mobility, infrastructures): | No | Research /Innovation | Top- down | 0.7 I |
| CDTI, Centre for Industrial Technological Development | Ministry of Economy and Competitiven ess | State Plan for promoting RDI Business Leadership. Programmes and Instruments: PID, INNODEMANDA, INNPRONTA | No | Innovation | Bottom up | |
| | | - RDI projects: | | | | П |



Table with publications and patents data

| Indicator ² | SRIA theme | Publications | | Patents | |
|----------------------------------|---------------|--------------|---------------------|---------|--------|
| | | Spain | Europe ³ | Spain | Europe |
| Raw data | QI | 4253 | 33531 | 2 | 59 |
| | Q2 | 4500 | 37391 | 46 | 855 |
| | Q3 | 13887 | 134254 | 44 | 759 |
| | Q4 | 2643 | 15957 | 20 | 184 |
| | Q5 | 2180 | 22514 | 12 | 329 |
| | ALL | 17488 | 142901 | 122 | 2256 |
| Increasing rate ⁴ | | 3.0 | 2.1 | 2.3 | ١.3 |
| Patens per 1,000 publications | | ES: 6.9 | 95; Europe: I | 5.78 | |
| Standardized by | QI | 91.2 | 53.7 | 0.0 | 0.0 |
| , population ⁵ | Q2 | 96.5 | 59.9 | 1.0 | 1.4 |
| (10 ⁶ Inhabitants) | Q3 | 297.9 | 215.0 | 0.9 | 1.2 |
| | Q4 | 56.7 | 25.5 | 0.4 | 0.3 |
| | Q5 | 46.8 | 36.0 | 0.3 | 0.5 |
| | ALL | 375.2 | 228.8 | 2.6 | 3.6 |
| Standardized by | QI | 424.0 | 229.3 | 0.2 | 0.4 |
| GDP ⁶ | Q2 | 448.6 | 255.7 | 4.6 | 5.8 |
| (100 x 10 ³ M EUR) | Q3 | 1384.5 | 918.1 | 4.4 | 5.2 |
| | Q4 | 263.5 | 109.1 | 2.0 | ١.3 |
| | Q5 | 217.3 | 154.0 | ١.2 | 2.2 |
| | ALL | 1743.5 | 977.2 | 12.1 | 15.4 |

⁶ Gross Domestic Product (GDP), nominal, obtained from

 ² All data correspond to the period 1999 - 2013.
 ³ Considered as the 28 EU Member States plus the 12 Associated Countries.

⁴ Increasing Rate is the number of publications or patens in 2009-2013 divided by the number in 1999-2003 (considering ALL water topics).

 $^{^5}$ Population obtained from http://en.wikipedia.org/wiki/List_of_countries_by_population.

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 |
|---------------|---|---------|------------------------|
| QI | SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (CAT, CVA, AND, PV, CAM, GAL, DGA) | CCAA | 27 |
| Q2 | SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (AND, CAT, CVA GAL, EX, CYL, CAM) | CCAA | 32 |
| Q3 | MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (GAL, AND, CAT, CVA, PV, CAM, CYL) | CCAA | 31 |
| Q4 | SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (AND, GAL, CVA, CAT, CAM, DGA) | CCAA | 19 |
| | INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA | INIA | П |
| Q5 | SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (CAT, AND, CVA, CAM, DGA, PV, GAL) | CCAA | 22 |
| ALL | SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS | MINECO | 100 |
| | AUTONOMOUS GOVERNMENTS (CAT, AND, CVA, GAL, CAM, PV. DGA, CYL, EX) | CCAA | 30 |



| SRIA | Performing Institutions ¹ | Intensity of |
|-------|--|--------------|
| theme | | citations |
| QI | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS, CSIC ² | 100 |
| | | 33 |
| | | 18 |
| | UNIVERSITAT DE LES ILLES BALEARS | 13 |
| | POLYTECHNIC UNIVERSITY OF MADRID | 11 |
| Q2 | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS | 100 |
| | UNIVERSITY OF BARCELONA | 58 |
| | POLYTECHNIC UNIVERSITY OF VALENCIA | 31 |
| | AUTONOMOUS UNIVERSITY OF BARCELONA | 31 |
| | UNIVERSITY OF GRANADA | 29 |
| Q3 | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS | 100 |
| | UNIVERSITY OF BARCELONA | 30 |
| | UNIVERSITY OF VALENCIA | 19 |
| | UNIVERSITY OF SANTIAGO DE COMPOSTELA | 18 |
| | POLYTECHNIC UNIVERSITY OF VALENCIA | 16 |
| Q4 | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS | 100 |
| | UNIVERSIDAD DE CORDOBA | 27 |
| | UNIVERSIDAD POLITECNICA DE CARTAGENA | 22 |
| | POLYTECHNIC UNIVERSITY OF MADRID | 20 |
| | UNIVERSITAT DE LLEIDA | 18 |
| Q5 | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS | 100 |
| | POLYTECHNIC UNIVERSITY OF VALENCIA | 28 |
| | UNIVERSITY OF BARCELONA | 24 |
| | POLYTECHNIC UNIVERSITY OF MADRID | 22 |
| | UNIVERSIDAD DE CORDOBA | 22 |
| ALL | CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS | 100 |
| | UNIVERSITY OF BARCELONA | 32 |
| | AUTONOMOUS UNIVERSITY OF BARCELONA | 18 |
| | | 18 |
| | POLYTECHNIC UNIVERSITY OF VALENCIA | 17 |
| L | | 17 |

¹ A number of Water RDI Institutes have been created in Spain in the last decades by large RDI performers and/or governments. These institutes are not very visible in bibliometric analyses because author affiliation often does not include the name of the Institute. A non-exhaustive list follows:

[•] CENTA, Fundación centro de las nuevas tecnologías del agua (Andalucía Government). Sevilla

[•] CIDTA, Research and Development Center for Water Technology (University of Salamanca). Salamanca.

[•] ICRA, Catalan Institute for Water Research (Catalan Government). Girona.

[•] IDAEA, Institute of Environmental Assessment and Water Research (CSIC). Barcelona.

[•] IMDEA, Water Institute (Madrid Government). Madrid.

[•] ITA, Polytechnic University of Valencia. Valencia.

[•] IUACA, University Institute of Water and Environmental Sciences (University of Alicante). Alicante.

[•] Water Institute (University of Granada). Granada.

[•] Water Research Institute (University of Barcelona). Barcelona.



- Almeria Solar Platform (PSA-CIEMAT). Almeria.
- CETaqua (Agbar, University of Santiago and CSIC). Santiago de Compostela.

² CSIC is the largest public institution dedicated to research in Spain, with a staff of about 15,000 and Institutes distributed throughout the country. Outstanding institutes on Water RDI include: CEBAS (Centro de Edafología y Biología Aplicada del Segura, Murcia); IDAEA (Instituto de Diagnóstico Ambiental y Estudios del Agua, Barcelona); CEAB (Centro de Estudios Avanzados de Blanes, Girona); EEAD (Estación Experimental de Aula Dei, Zaragoza); IAS (Instituto de Agricultura Sostenible, Córdoba); IRNAS (Instituto de Recursos Naturales y Agrobiología, Sevilla).