



HELLENIC REPUBLIC
MINISTRY OF DEVELOPMENT

GSRI

GENERAL SECRETARIAT FOR
RESEARCH AND INNOVATION

Evaluation of Research and Innovation actions of the GSRI 2007-2013



European Union
European Regional
Development Fund

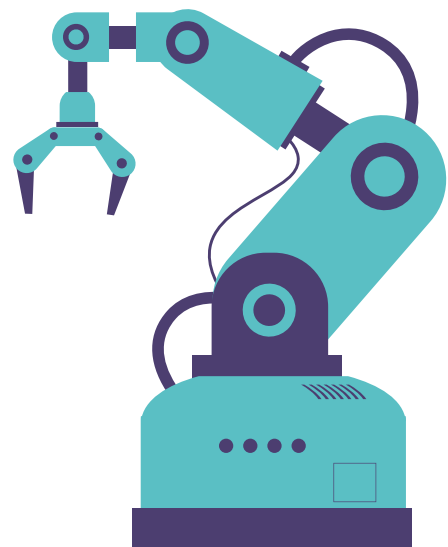
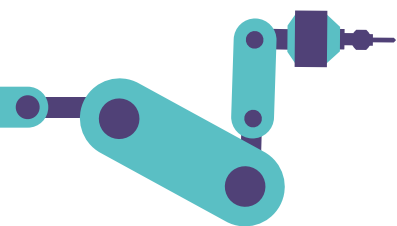
EPAnEK 2014-2020
OPERATIONAL PROGRAMME
COMPETITIVENESS
ENTREPRENEURSHIP
INNOVATION



Co-funded by Greece and the European Union

www.gsri.gov.gr

Evaluation of Research and Innovation actions of the GSRI 2007-2013





Address

by the Secretary General for Research and Innovation

Mr. Athanasios Kyriazis



The General Secretariat for Research and Innovation (being the main responsible Public Service for the Planning, Coordination and Implementation of Research, Technological Development and Innovation (policies for the country, has long adopted the evaluation of its activities, as a fundamental tool for improving the Design, Programming and Implementation of Research and Innovation policies, as well as its operational development and upgrading.

In accordance with the above, GSRI launched an open, international call for tenders for the "Evaluation of the GSRI Research Innovation Actions under the NSRF 2007-2013" concerning the systematic "ex post" evaluation of Research and Innovation Actions, implemented by the GSRI and the Special Authority MIA RI during the 2007-2013 Programming Period (NSRF 2007-2013). The execution of the project was undertaken by PLANET S.A., as the Contractor which was selected through a competitive procedure, in accordance with the terms, conditions and provisions of the said tender.

The evaluation was successfully carried out and completed under the guidance and close cooperation of the Contractor with the executives of Department B Impact Assessment and Evaluation and the Research and Innovation Policy Planning and Programming Directorate of GSRI, a cooperation that was extremely harmonious, effective and efficient. The process of the evaluation is a quality process, that weighs the relevance, the efficiency, the effectiveness and the impact of policies, actions and means of implementation in relation to the initially set planning objectives, while at the same time being a complementary and particularly useful part of the perpetual cycle of the implementation of strategic options of national policies.

Finally, I would like to thank and congratulate both the executives of the Contractor and the executives of the GSRI for their efforts in order to successfully complete this evaluation, draw important conclusions and points, and provide useful improvement suggestions with the ultimate goal of improving the efficiency of Research and Innovation policies, strengthening the country's development vision and generally better serving the citizens' well being and quality of life. In addition, thanks are due to the representatives of companies, research institutions and individuals, who benefited from grants from GSRI actions, and contributed substantially to this effort by providing useful data and participating in interviews, adding an important element to the successful completion of this evaluation.

A handwritten signature in black ink, which appears to read "A. Kyriazis". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Purpose - Methodology

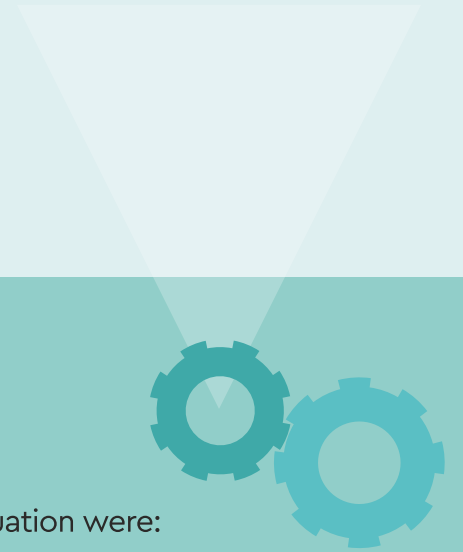
The "Evaluation of Research and Innovation Actions NSRF 2007-2013 of GSRI (former GSRT)", was carried out from September 2021 to September 2023 by the company Planet S. A., selected following the relevant international tender, in collaboration with IOBE, and the companies Technopolis Group and Opix.

Objectives of the Evaluation

The main objectives of the Evaluation of Actions of GSRI were:

- the assessment of the effectiveness and efficiency of the Actions
- the assessment of their impact on the economy and society
- the improvement and continuous adjustment of research policy





Methodology

The main methodological tools used for the preparation of the evaluation were:

- Field research (questionnaires and interviews)
- Case studies
- Bibliography study
- Bibliometric analysis
- Network analysis
- Counterfactual analysis



The project was included in the Operational Programme " Entrepreneurship and Innovation 2014 2020 and was funded by the European Union (European Regional Development Fund) and national resources through the Public Investment Programme under the Act "INSTALLATION OF A MONITORING MECHANISM FOR THE IMPLEMENTATION OF THE NATIONAL STRATEGY RIS 3 COLLECTION PROCESSING OF INDICATORS", with MIS Code 5008067 and DP E1191 with no 2020 ΣΕ 11910026



**Overall outline
of the Research and
Technology Activities
of GSRI during the
period 2007-2013**





Overall illustration of the Research and Technology Activities of GSRI during the period 2007-2013

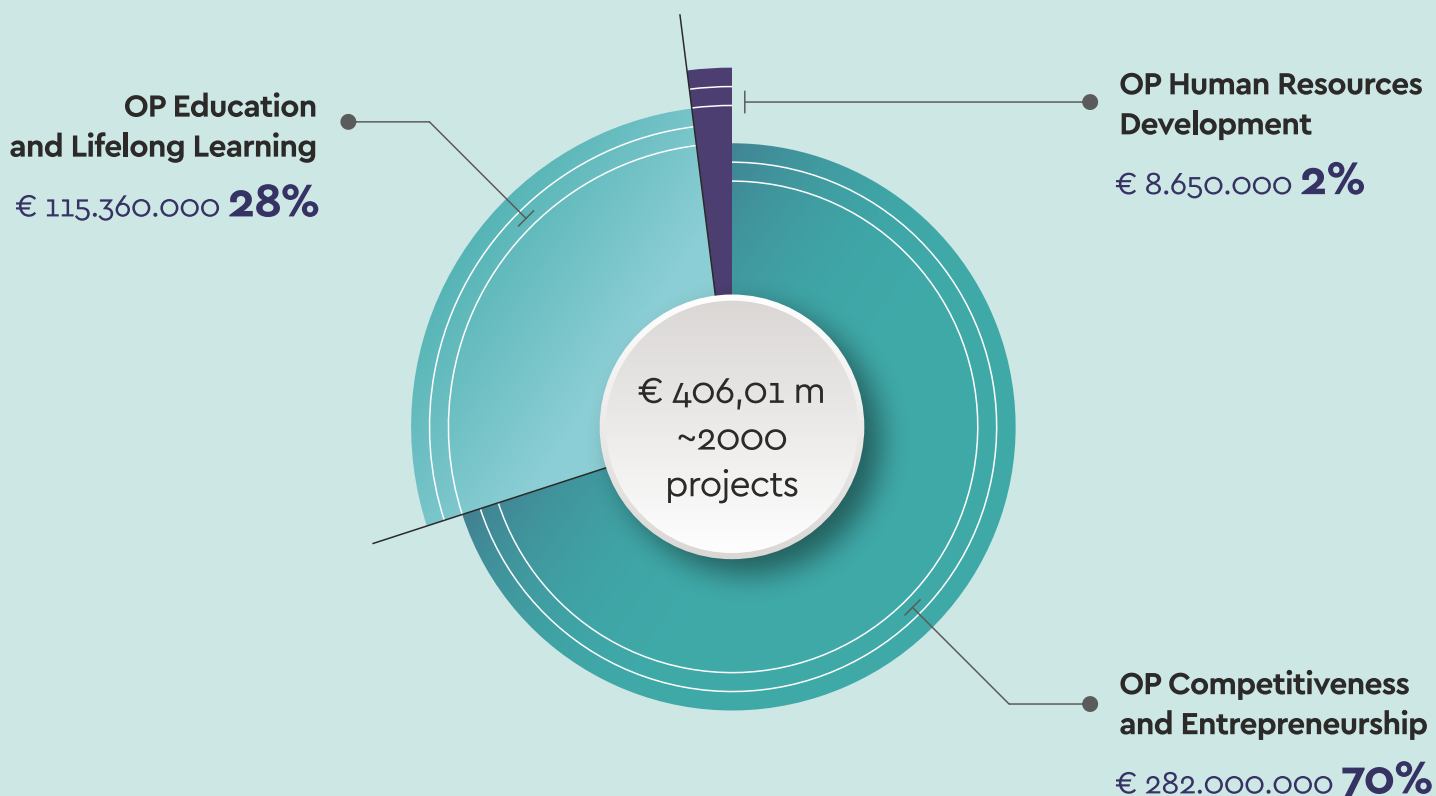
GSRI managed a considerable number of Research, Technological Development and Innovation Actions, which can be classified into eight Groups, each of which was implemented through one or more Actions.

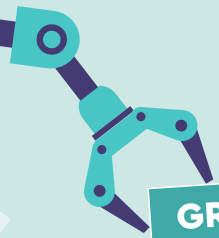
The Actions were included in the Operational Programs of the NSRF 2007-2013 and were co-financed by the European Regional Development Fund of the European Union and the National Budget:

- Operational Programme "Competitiveness and Entrepreneurship (EPAN II)"
- Operational Programme "Education and Lifelong Learning"
- Operational Programme "Human Resources Development"

The budget (Public Expenditure) of all the Actions amounted to a little more than 400 million Euros, while the number of projects implemented approached 2000.

Public expenditure per Operational Programme (OP)

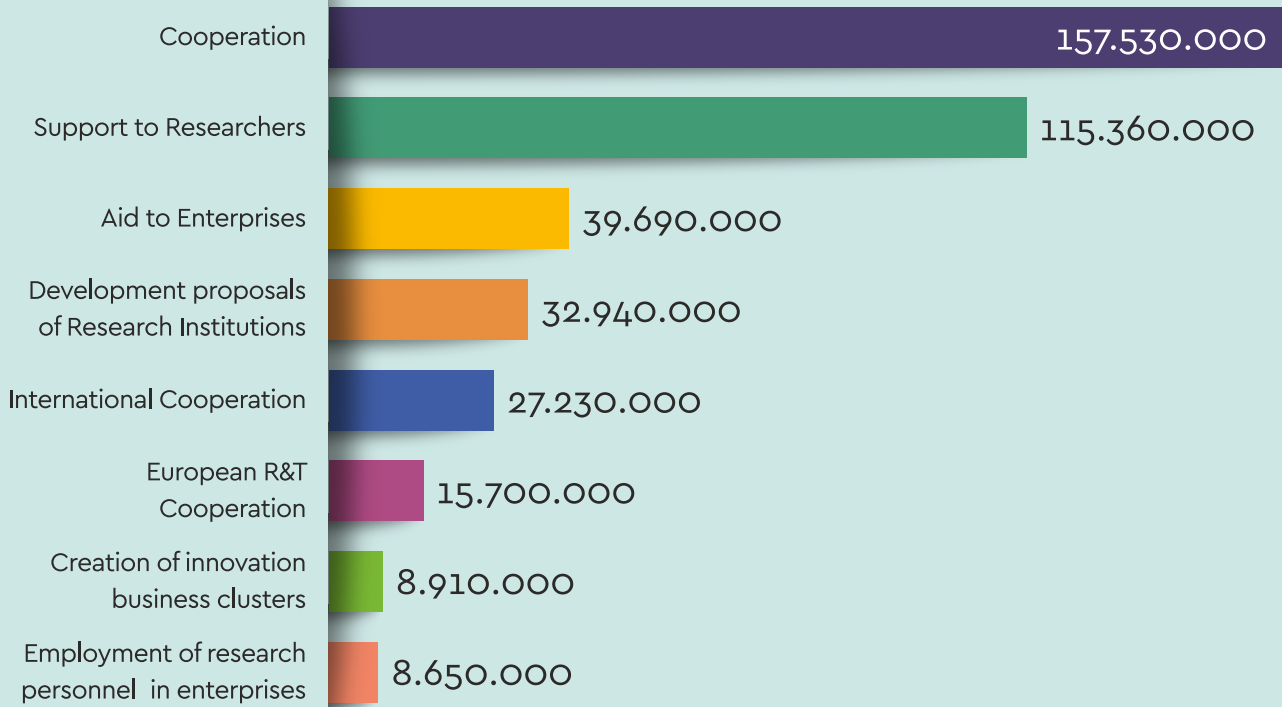




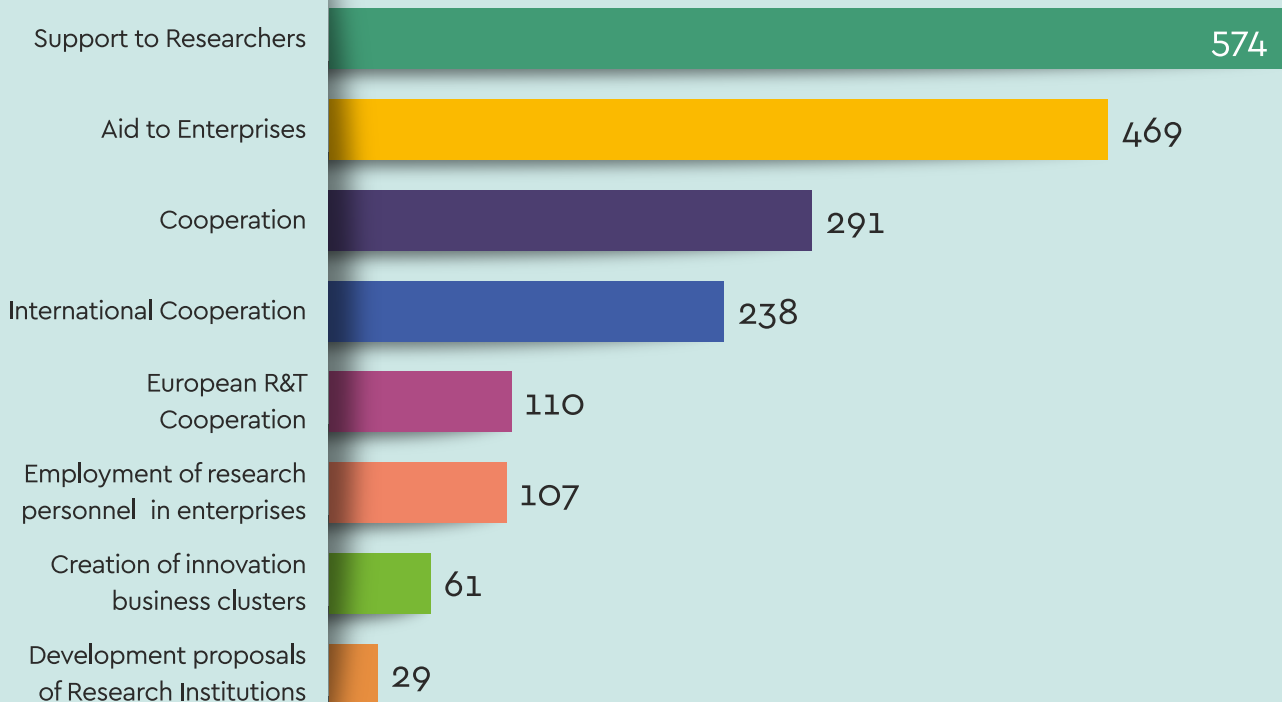
GROUPS OF ACTIONS	ACTIONS
1	Development proposals of Research Institutions -KRIPIS
2	Collaborative projects between businesses and Universities & Research Institutions (COOPERATION)
3	<p>Aid to Enterprises</p> <p>3a. Programme for the Development of Industrial Research and Technology – PAVET</p> <p>3b. New Businesses – Young Business Support for Research & Technological Development Activities</p> <p>3g. Innovation Vouchers for Small and Medium-sized Enterprises</p> <p>3d. Spinoff – Spinout – Creation – Support to young Innovative Enterprises, mainly knowledge-intensive ones</p> <p>3e. Support of SME Groups for Research & Technological Development activities</p>
4	<p>International Cooperation</p> <p>4a. Bilateral Research & Technological Cooperation between Greece and other countries</p> <p>4b. Bilateral Research & Technological Cooperation between Greece and China, Germany, Israel</p>
5	Creation of innovation business clusters
6	<p>European R&T Cooperation</p> <p>6a. ERANET –European R&T Cooperation - Support to Greek Institutions</p> <p>6b. Support to Greek organizations participating in "ENIAC & ARTEMIS"</p> <p>6c. Establishment of national research networks in ESFRI areas</p> <p>6d. Support to Greek organizations participating in JPIs</p>
7	<p>Support to Researchers</p> <p>7a. EXCELLENCE I, II</p> <p>7b. Support to Postdoctoral Researchers (PR)</p> <p>7c. ERC Grant Schemes</p>
8	Employment of research personnel in enterprises

Public expenditure

per Group of Actions (€)



Number of projects per Group of Actions



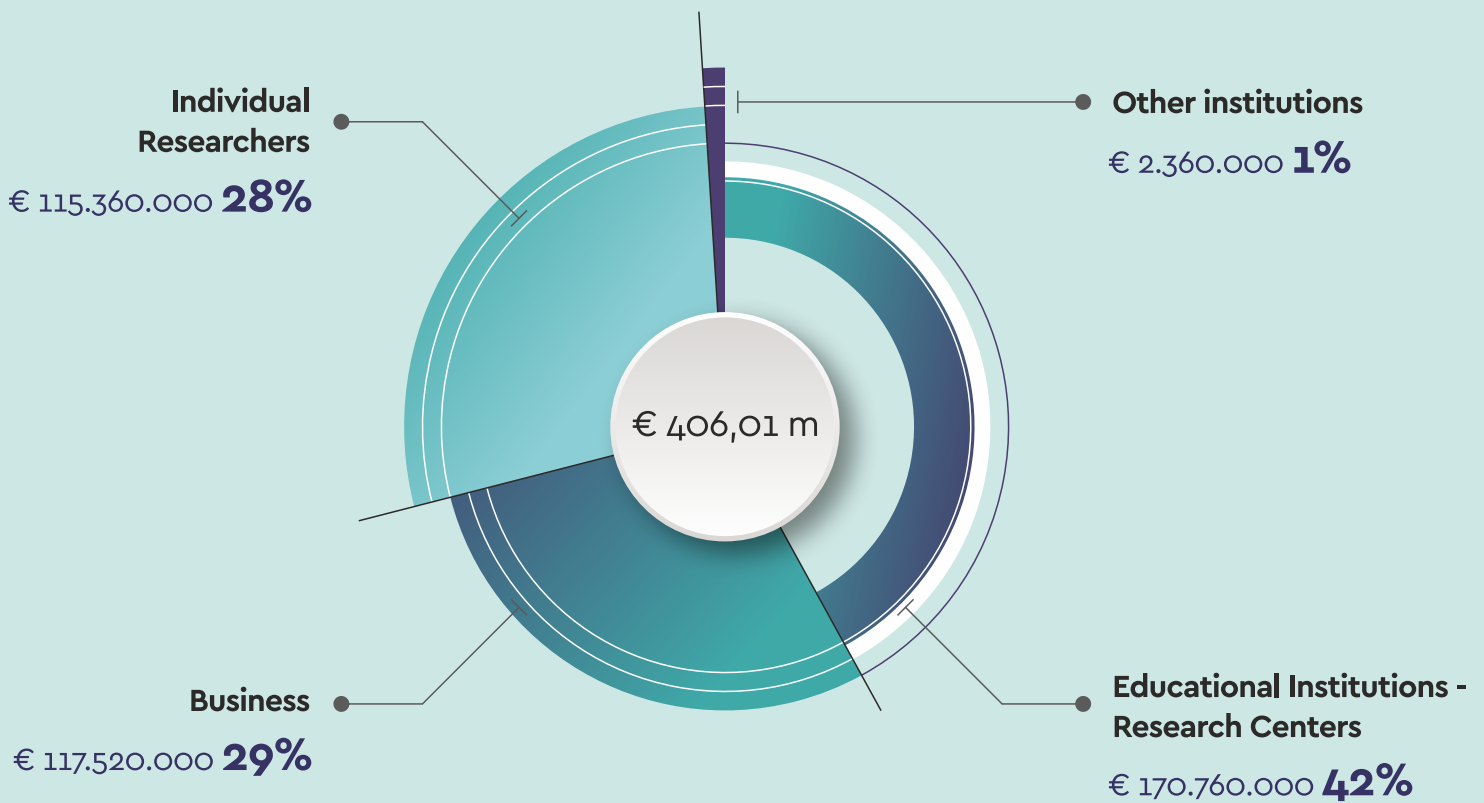
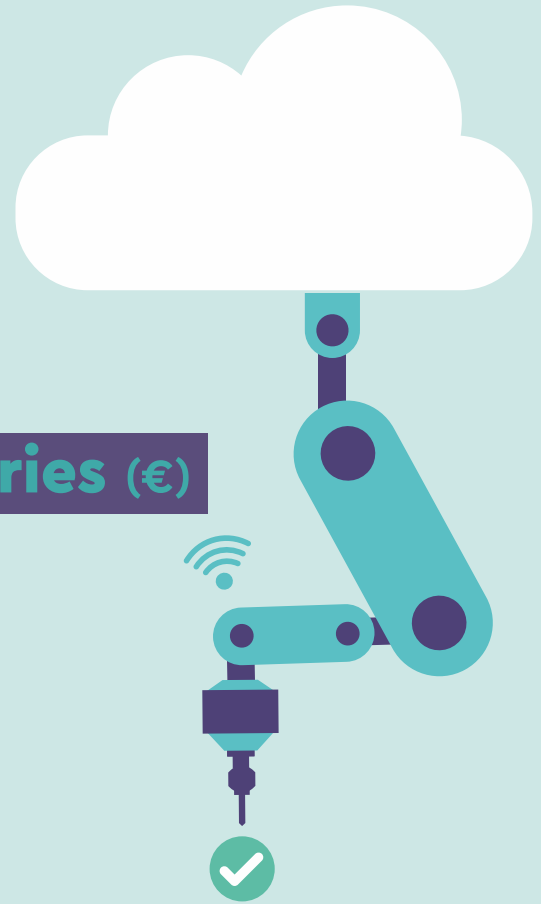
Public expenditure

per category of beneficiaries (€)

The beneficiaries of the R&T Actions of GSRI can be classified into three major categories:

- Business
- Educational Institutions / Research Centers, which include Universities, Technological Educational Institutes, Research Centers, other Research Centers and Research / Technological Institutions.
- Individual Researchers

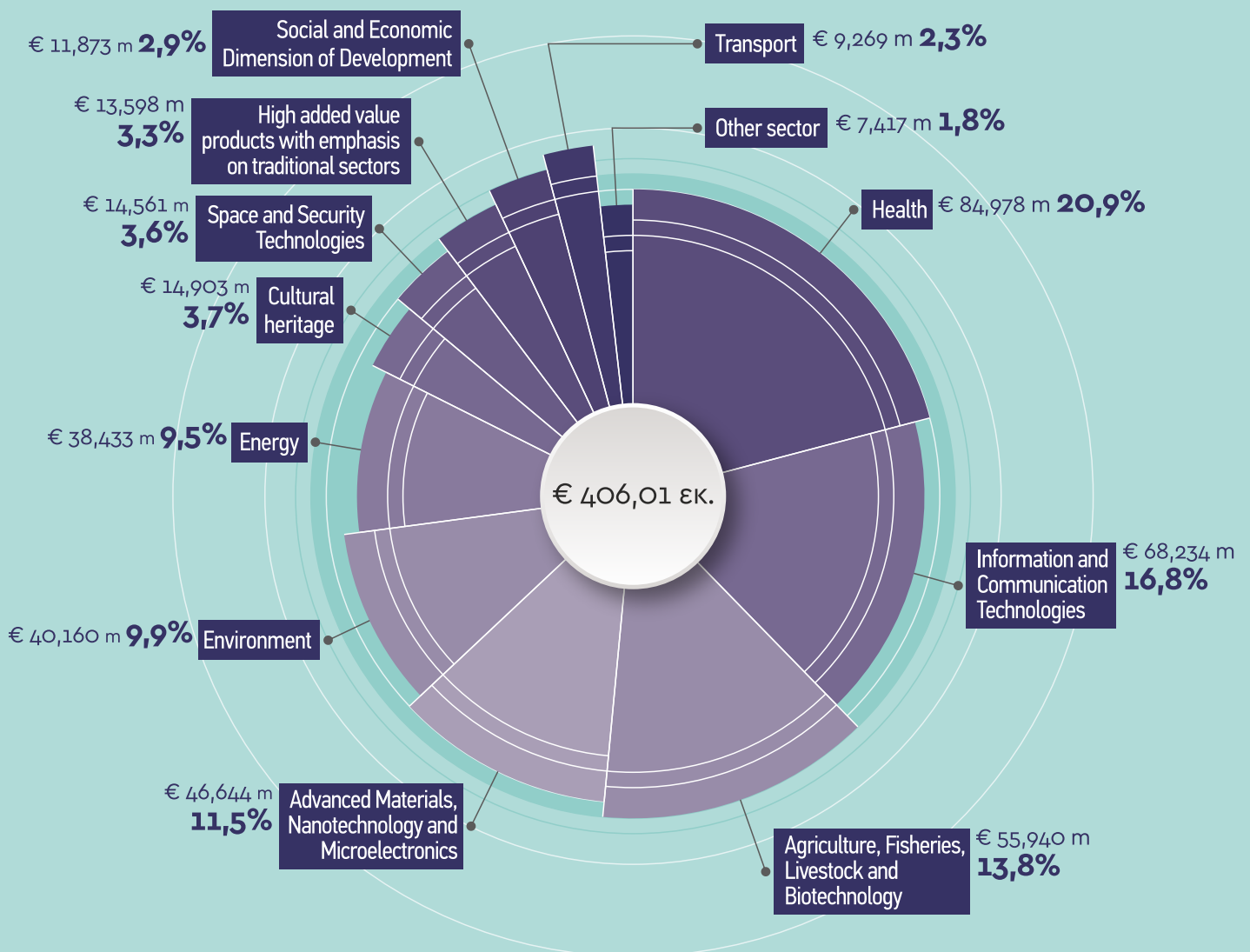
Other bodies of the wider public sector, NGOs, hospitals, etc. were also supported.



Public expenditure per RTDI sector

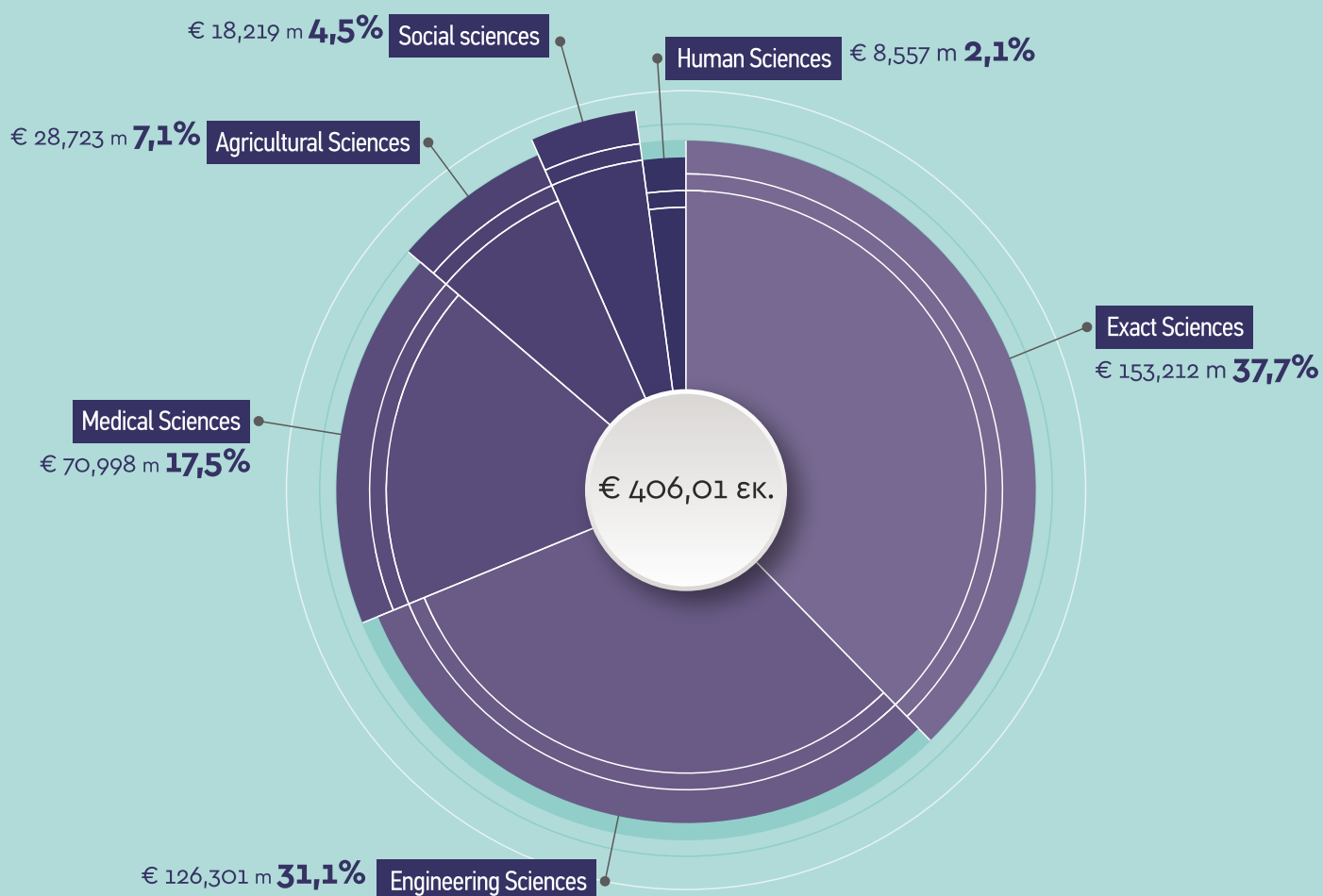
The R&I Actions of the GSRI covered all Sectors of Research, Technological Development and Innovation (RTDI), with the largest project budget by order of size as below:

- Health
- Information and Communication Technologies
- Agriculture, Fisheries, Livestock and Biotechnology
- High-added value products and production technologies with emphasis on traditional sectors
- Environment
- Energy



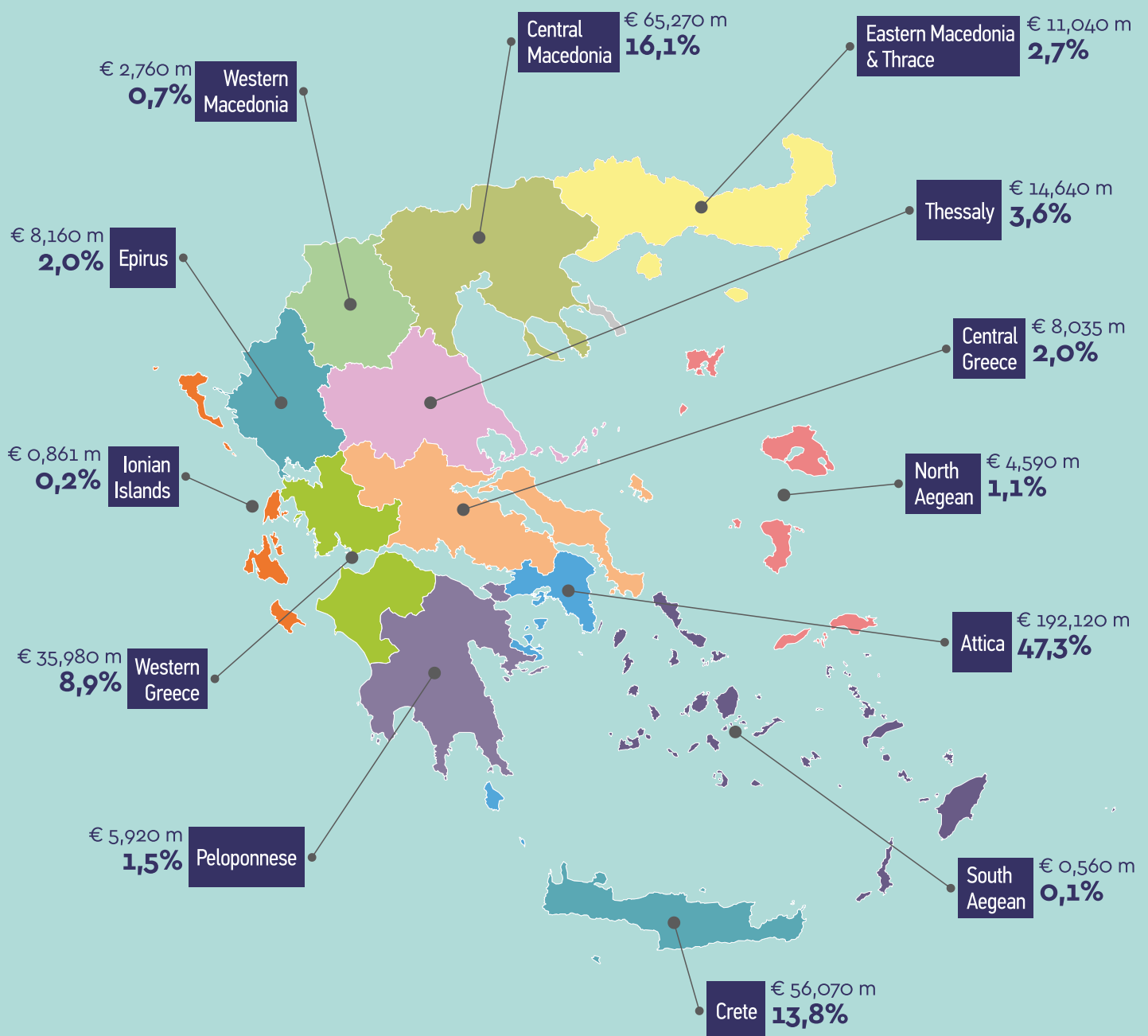
Public expenditure per Scientific Field

Similarly, they covered all Scientific Fields, with the largest project budget by order of size the fields of Science, Engineering and Medical Sciences.



Public expenditure per Region

They were implemented in all Greek Regions, of which the regions of Attica, Central Macedonia, Crete and Central Greece absorbed the largest project budget.



GSRI Actions AT A GLANCE

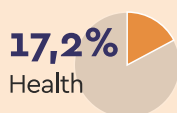
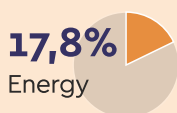
1 Development proposals of Research Institutions -KRIPIS



Development proposals of Research Institutions - KRIPIS

29 projects **€32,94** m

The Action "Development Proposals of Research Bodies -KRIPIS" exclusively supported Educational Institutions and Research Centers and covered most RTDI sectors:



2 Collaborative projects between businesses and Universities & Research Institutions (COOPERATION)

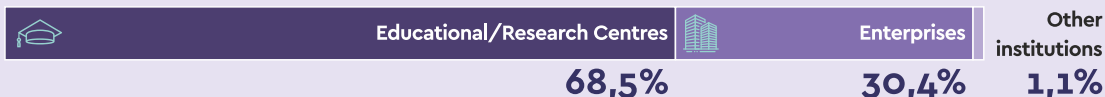


R&T projects by partnerships of enterprises, research centers, institutes, universities, technological, public and other bodies

291 projects **€157,53** m



The Action "COOPERATION" was the one with the largest budget among all the Actions. The funds were absorbed by:



It covered most RTDI sectors, in order:

- Health (21.7%)
- Agriculture, Fisheries, Livestock and Biotechnology (19.2%)
- Information and Communication Technologies (14.6%)
- Energy (11.3%)
- Advanced Materials, Nanotechnology - Nanosciences and Microelectronics (10.5%)
- Environment (9.2%)



EDUCATIONAL INSTITUTIONS
RESEARCH &
TECHNOLOGICAL CENTERS



ENTERPRISES



RESEARCHERS



OTHER INSTITUTIONS

3 Aid to Enterprises



Programme for the Development of Industrial Research and Technology (PAVET)

62 projects €**12,9** m

Support research and technological projects of enterprises to promote innovation



Young Business Support for Research and Technological Development

54 projects €**4,77** m



Support new businesses to promote Innovation, Research & Technology



Innovation Vouchers for SMEs

277 projects €**1,93** m

Support SMEs with consulting services and expertise



Spinoff – Spinout: creation-support for Young Innovative Enterprises

30 projects €**9,44** m



Support for the creation and development of innovative business activities



Support of SME Groups for RTD activities

46 projects €**10,65** m



Support business groups for industrial research projects and experimental development

The Group of Actions "**Aid to Enterprises**" ncluded multiple Business Support Actions and had the highest number of projects of all other Actions or Groups of Actions.

It was addressed exclusively to businesses of all sizes and covered most RTDI Sectors, with a larger project budget in order in the areas of:

- Information and Communication Technologies (31.5%)
- Agriculture, Fisheries, Livestock and Biotechnology (20.4%)
- Environment (9.2%)
- Advanced Materials, Nanotechnology - Nanosciences and Microelectronics (9.2%)
- Health (9.1%)

4

International Cooperation



Bilateral R&T Cooperation between Greece and other countries

147 projects €**2,32** m

Network development, technology transfer, skills improvement

Cooperation of Greece with:



France



Hungary



Romania



Slovakia



Turkey



Czech Republic



Expanded Bilateral Research & Technological Cooperation

91 projects €**24,93** m



Larger-scale S&T projects by enterprises or partnerships with S&T institutions

Cooperation of Greece with:



Germany



Israel



China

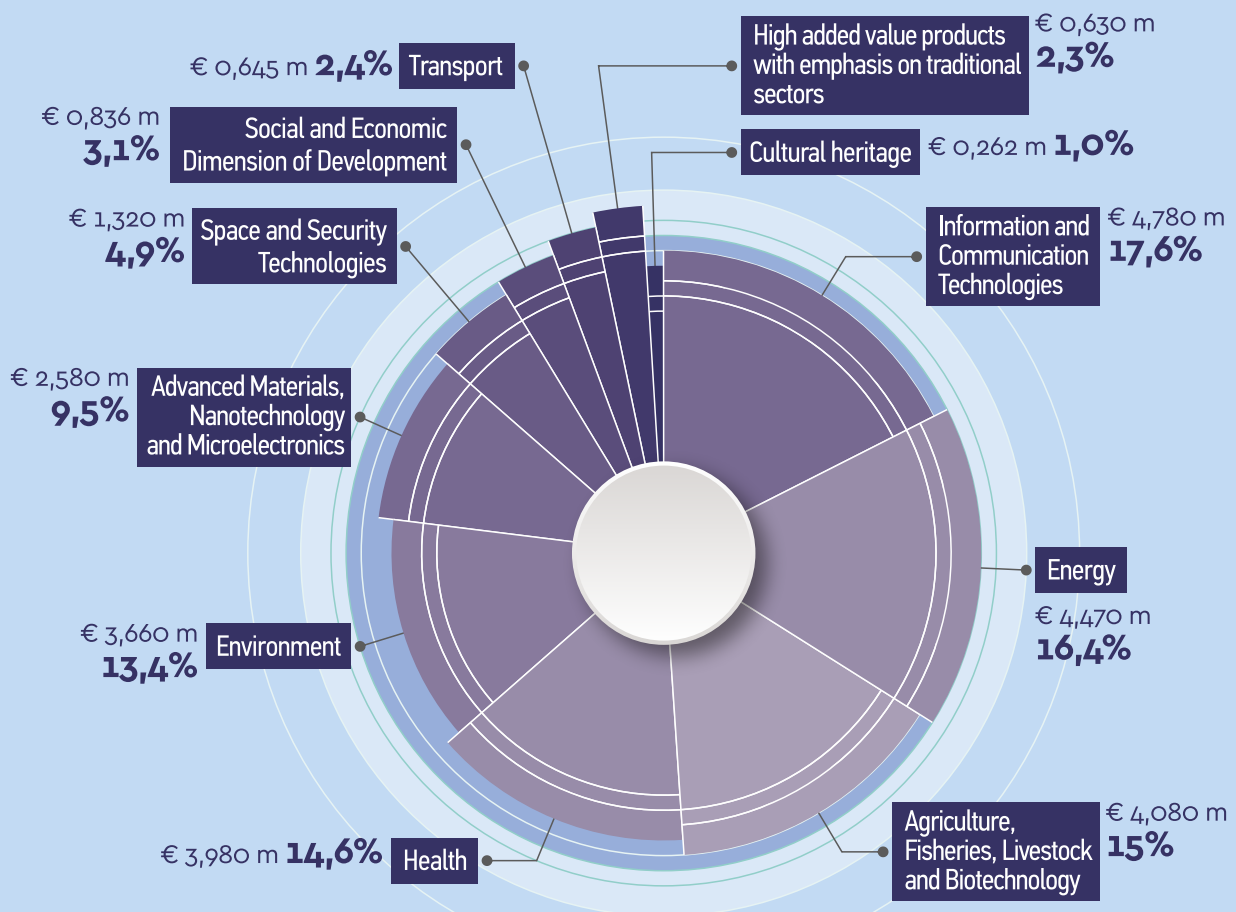
Public expenditure per category of beneficiaries

61,8% €16,830 m
 37% €10,090 m
 1,2% €0,320 m

Educational Institutions - Research Centers

Enterprises

Other institutions



5

Creation of innovation business clusters



Development of innovative products/services and achievement of economies of scale

3 projects €**8,91** m



The Action "**Creation of Innovative Business Clusters**" supported the creation of innovative business clusters with the participation of research institutions. The funding was allocated to Businesses and Assisting Organizations by 24% and 76%, respectively.



Funding (public expenditure) per RTDI sector

40,9%	36,1%	17,3%	5,7%
Space and Security Technologies €3,640 m	Information and Communication Technologies €3,210 m	Health €1,540 m	Energy €0,510 m

6

European R&T Cooperation



ERANET – European R&T Cooperation - Support to Greek Institutions

43 projects €**4,36** m



Funding of research projects of Greek institutions participating in European ERA-NETS Networks



Support to Greek organizations participating in "ENIAC & ARTEMIS"

50 projects €**9,43** m



Funding to strengthen embedded systems and nano-electronics



Establishment of national research networks in ESFRI areas

15 projects €**1,57** m



Funding of ESFRI research infrastructure activities in Greece

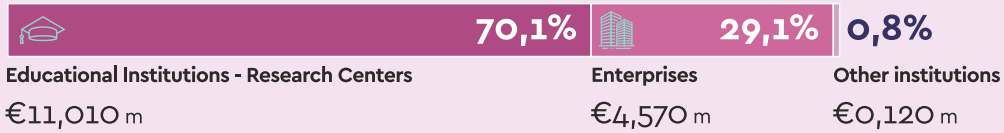


Support to Greek Organizations participating in JPIs

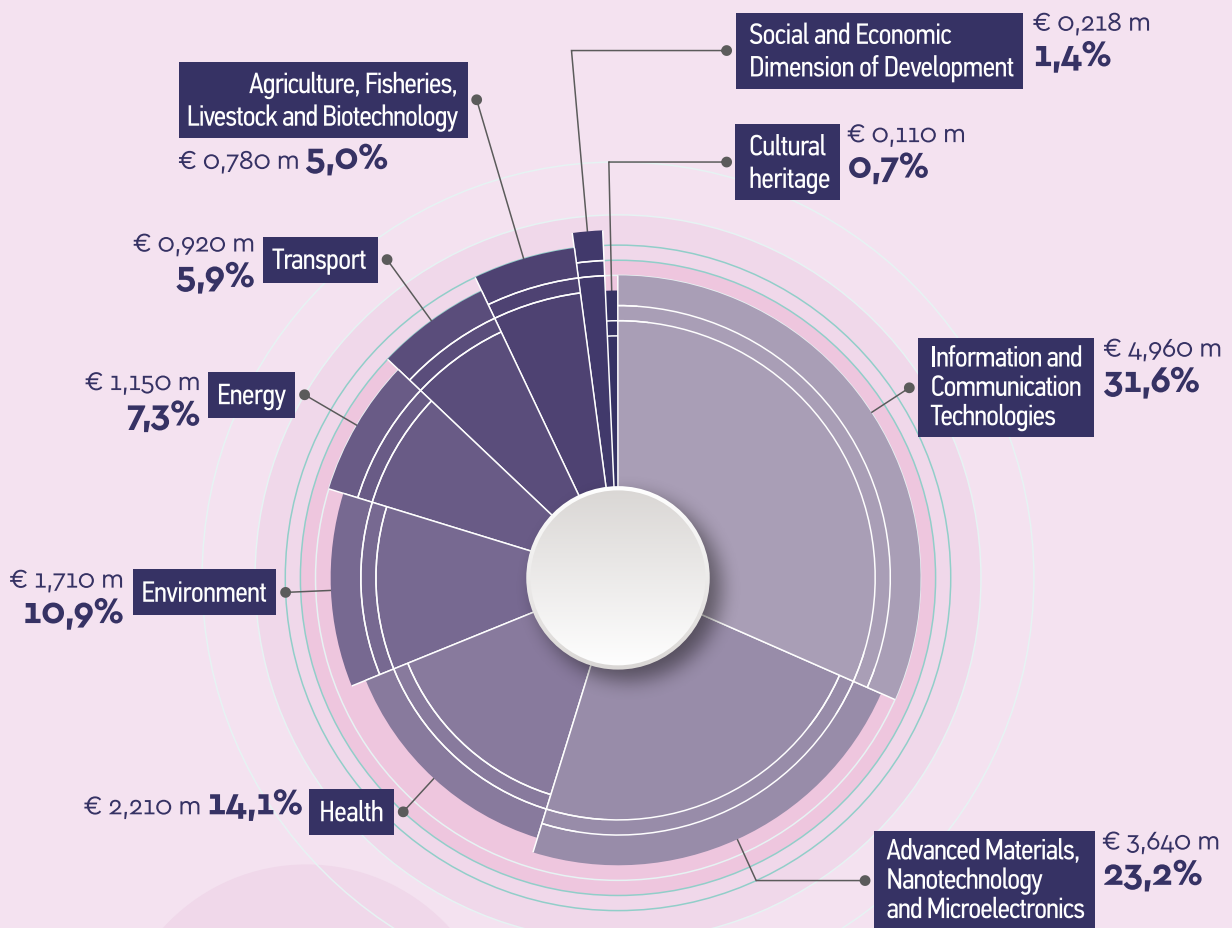
3 projects **€0,33 m**

JPI research project funding "Neurodegenerative Diseases with emphasis on Alzheimer's"

Public expenditure per category of beneficiaries



Public expenditure per RTDI sector



7

Support to Researchers



EXCELLENCE I, II

377 projects €83,6 m

Support to talented researchers with significant achievements and potential for advancement in their field



Support to Postdoctoral Researchers

183 projects €20,45 m

Promote research and acquire new research skills for the professional development of researchers

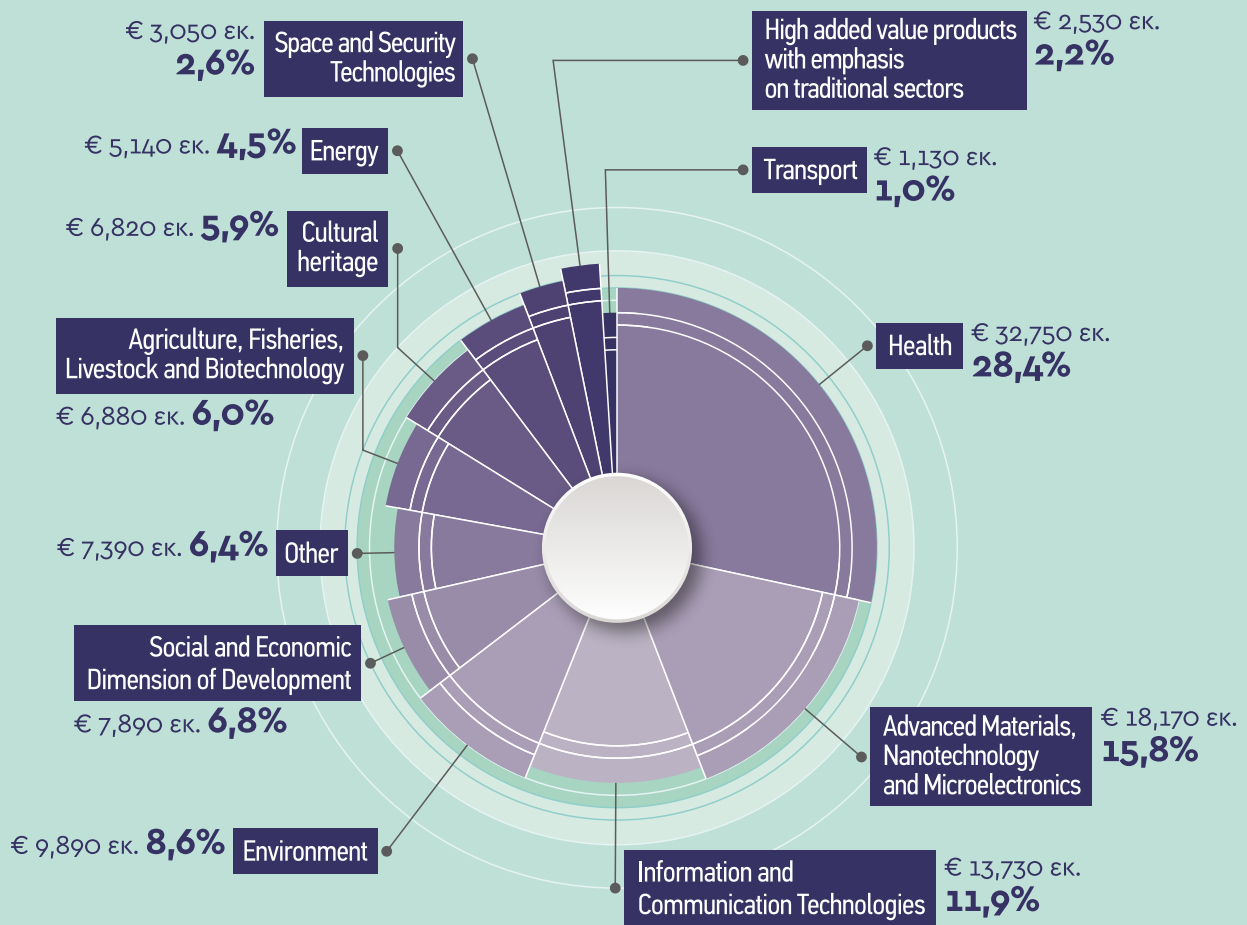


ERC Grant Schemes

14 projects €11,32 m

Reward to research proposals that were distinguished for their quality within the framework of the ERC

Public expenditure per RTDI sector





Increase of employment and work experience, familiarization of businesses with research

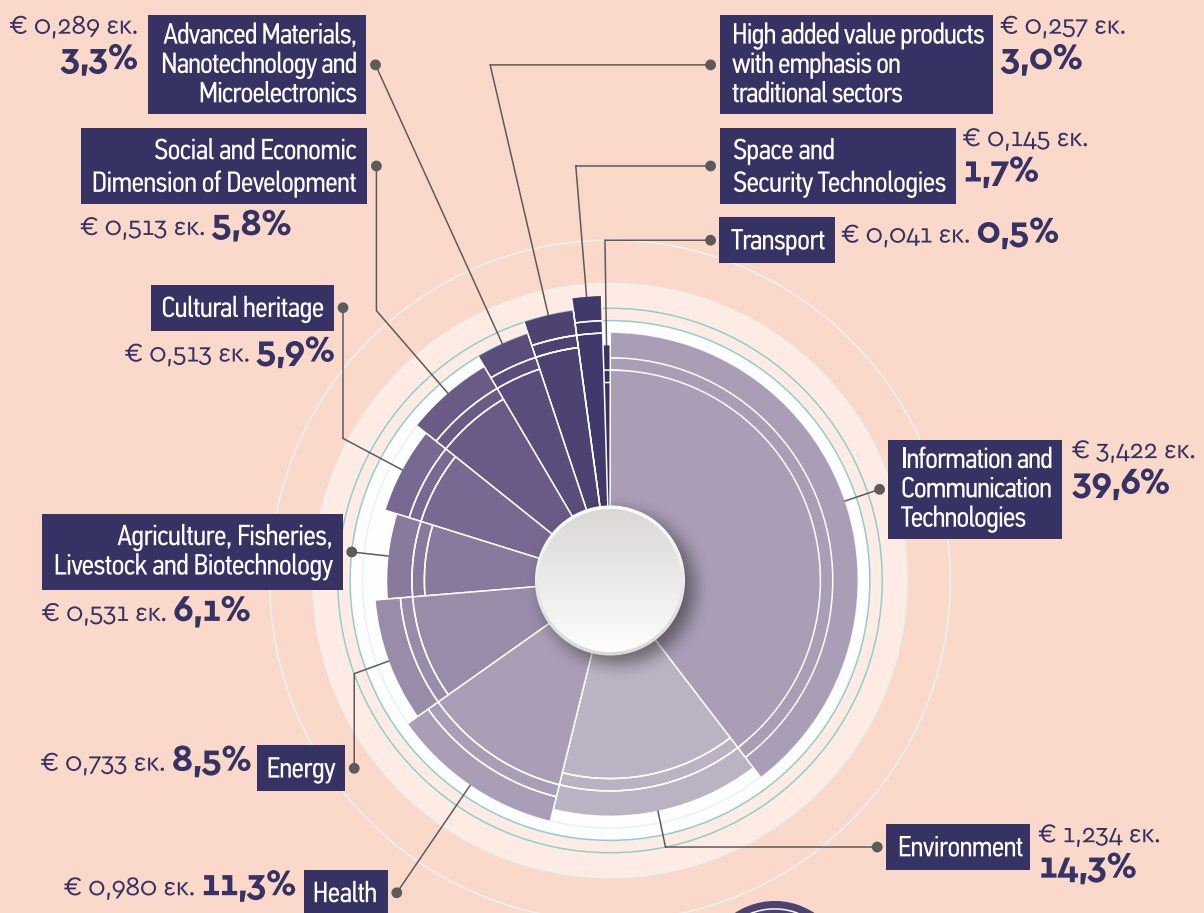
107 projects **€8,64** m



The Action "Employment of research staff in enterprises" supported

- enterprises and highly qualified personnel
- research staff for their employment in companies.

Public expenditure per RTDI sector





Benefits to BUSINESSES



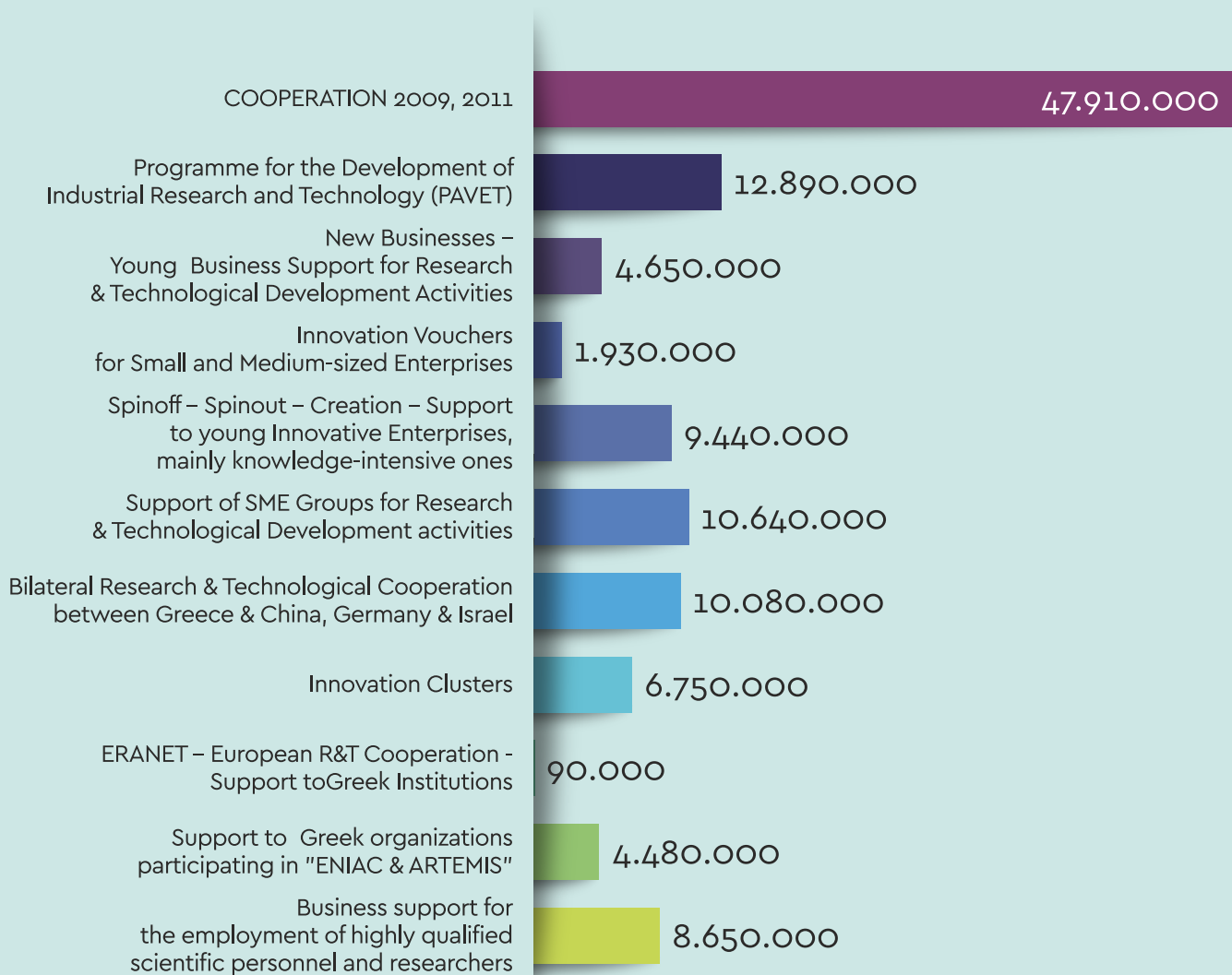
Benefits to Businesses

The GSRI's Actions brought together the wide participation of businesses and achieved significant results and impact on technological upgrades, networking, improved competitiveness and commercial penetration of enterprises in the domestic and international markets.

Through many of the Actions, which covered all RTDI Sectors and all Scientific Fields and were implemented in all Greek Regions, the enterprises received a total financing of approximately **€ 120 million**.



Funding of businesses through GSRI Actions (€)



Achievements

Direct aid from

- PAVET
- New businesses
- Spinoff – spinout
- Support Media Groups
- Innovation Vouchers

Development of collaborations with research organizations through the Actions

- Cooperation 2009, 2011
- Business clusters

Development of research potential

- Enhancing the employment of research staff in enterprises

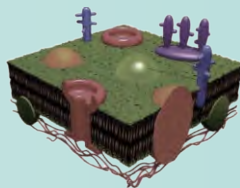
Internationalisation of activities

- International Cooperation

Participation in European Networks and Initiatives

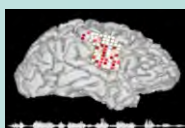
- ERANET
- Support to Greek organizations participating in "ENIAC & ARTEMIS"

- Development of advanced technologies for the benefit of their competitiveness



i.e. Research of tissue engineered scaffolds to inhibit multiple sclerosis

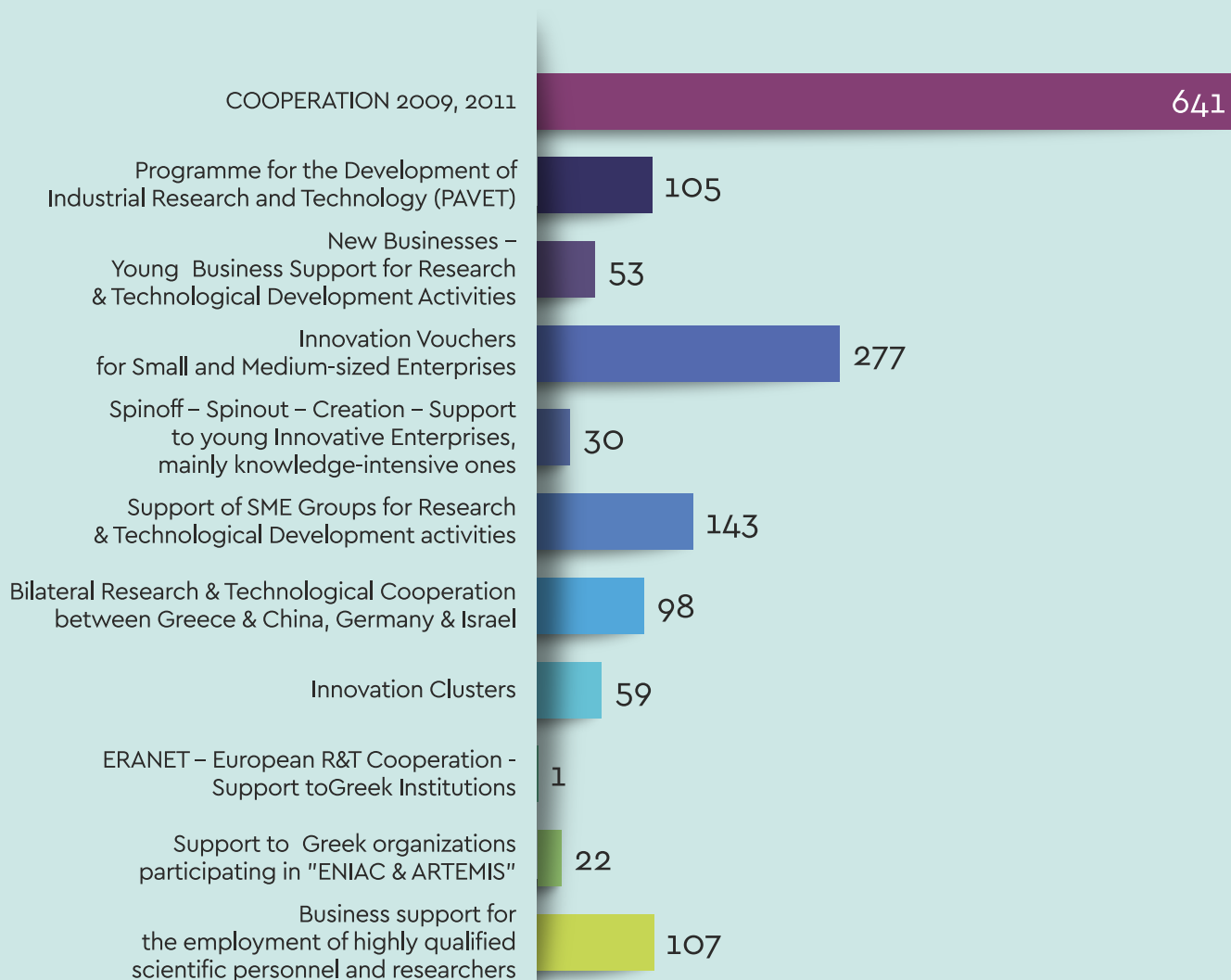
- Filing of 132 patent applications
- Development and commercialization of innovative products and services



i.e. Automation of production process development of new voices for synthetic speech systems

- Creation of cooperation networks between enterprises/research organizations or between them
- Development of a total of 3,000 collaborations between 1,200 enterprises and research organizations

Number of businesses participating in GDRI Actions





**Benefits to
EDUCATIONAL INSTITUTIONS
/ RESEARCH CENTERS**

Benefits to Educational Institutions / Research Centers

A great number of Educational Institutions / Research Centers participated in the Actions of the GSRI, i.e. **Higher Education Institutes, Technological Educational Institutes, Research Centers, Research / Technological Bodies / Researchers.**

EDUCATIONAL INSTITUTES



National Technical University of Athens



ARISTOTLE UNIVERSITY OF THESSALONIKI



HELLENIC REPUBLIC
National and Kapodistrian University of Athens



Pantelon University
of Social and Political Sciences



ΓΕΩΠΟΝΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
AGRICULTURAL UNIVERSITY OF ATHENS

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ



ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS



UNIVERSITY OF THESSALY



ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
UNIVERSITY OF CRETE



UNIVERSITY OF PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ
DEMOCRITUS UNIVERSITY OF THRACE



ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΙΓΑΙΟΥ
UNIVERSITY OF THE AEGEAN



ΠΟΛΥΤΕΧΝΕΙΟ ΚΡΗΤΗΣ
TECHNICAL UNIVERSITY OF CRETE



ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ
UNIVERSITY OF PIRAEUS



ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΛΟΠΟΝΝΗΣΟΥ
UNIVERSITY OF THE PELOPONNESE



ΧΑΡΟΚΟΠΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ
HAROKOPIO UNIVERSITY



TECHNOLOGICAL EDUCATIONAL INSTITUTE OF CRETE



HELLENIC REPUBLIC
UNIVERSITY OF MACEDONIA



ALEXANDER TECHNOLOGICAL EDUCATIONAL INSTITUTE OF THESSALONIKI

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ ΑΘΗΝΑΣ



HELLENIC REPUBLIC
ATHENS UNIVERSITY OF APPLIED SCIENCES



TECHNOLOGICAL EDUCATIONAL INSTITUTE OF THESSALY



Eastern Macedonia & Thrace Institute of Technology



ΚΑΠΕ CRES



Benaki Phytopathological Institute



ΕΛΓΟ-ΔΗΜΗΤΡΑ
HELLENIC AGRICULTURAL ORGANIZATION - DIMITRA



INSTITUTE OF COMPUTER TECHNOLOGY AND PUBLICATIONS "DIOFANTOS"

The Research Institutions of this category of beneficiaries include the **Research and Technological Institutions supervised by GSRI**, which have a special presence in the Research, Technological Development and Innovation programs implemented in the country.

RESEARCH INSTITUTES



ΕΘΝΙΚΟ ΙΔΡΥΜΑ ΕΡΕΥΝΩΝ
National Hellenic Research Foundation



ΕΛΛΗΝΙΚΟ ΙΝΣΤΙΤΟΥΤΟ ΠΑΣΤΕΡ
INSTITUT PASTEUR HELLENIQUE

ΕΘΝΙΚΟ ΚΕΝΤΡΟ ΚΟΙΝΩΝΙΚΩΝ ΕΡΕΥΝΩΝ
NATIONAL CENTRE FOR SOCIAL RESEARCH



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



DEMOKRITOS
NATIONAL CENTRE FOR SCIENTIFIC RESEARCH



"ALEXANDER FLEMING"
Biomedical Sciences Research Center



FORTH

FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS

TECHNOLOGICAL INSTITUTES



GREEK ATOMIC ENERGY COMMISSION



Patras
Science
Park

Επιστημονικό
Πάρκο
Πατρών



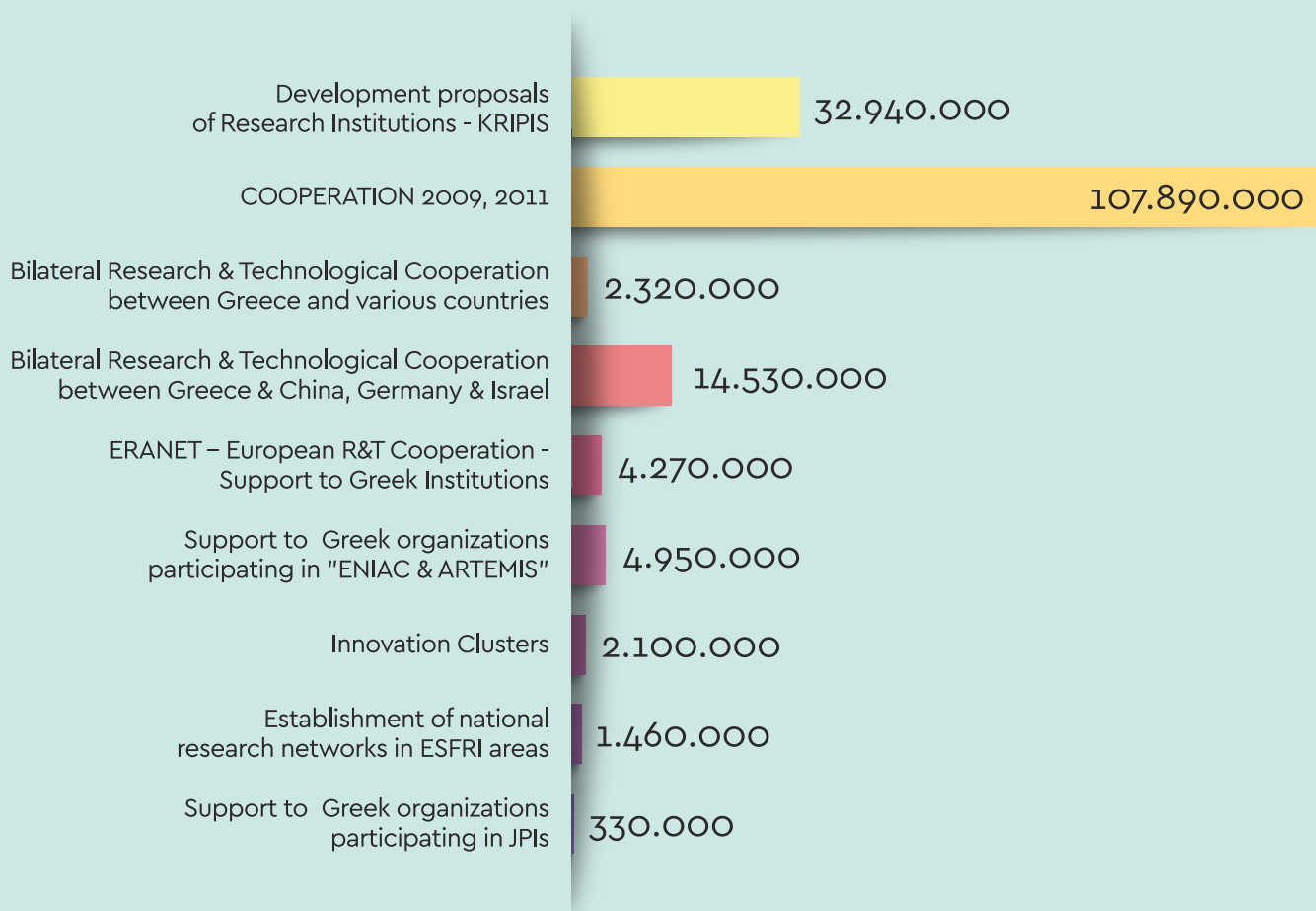
THESSALONIKI SCIENCE CENTER
& TECHNOLOGY MUSEUM

Benefits to Educational Institutions / Research Centers

Many of the Actions contributed to the total funding of Educational Institutions / Research Centers with **approximately € 170 million.**

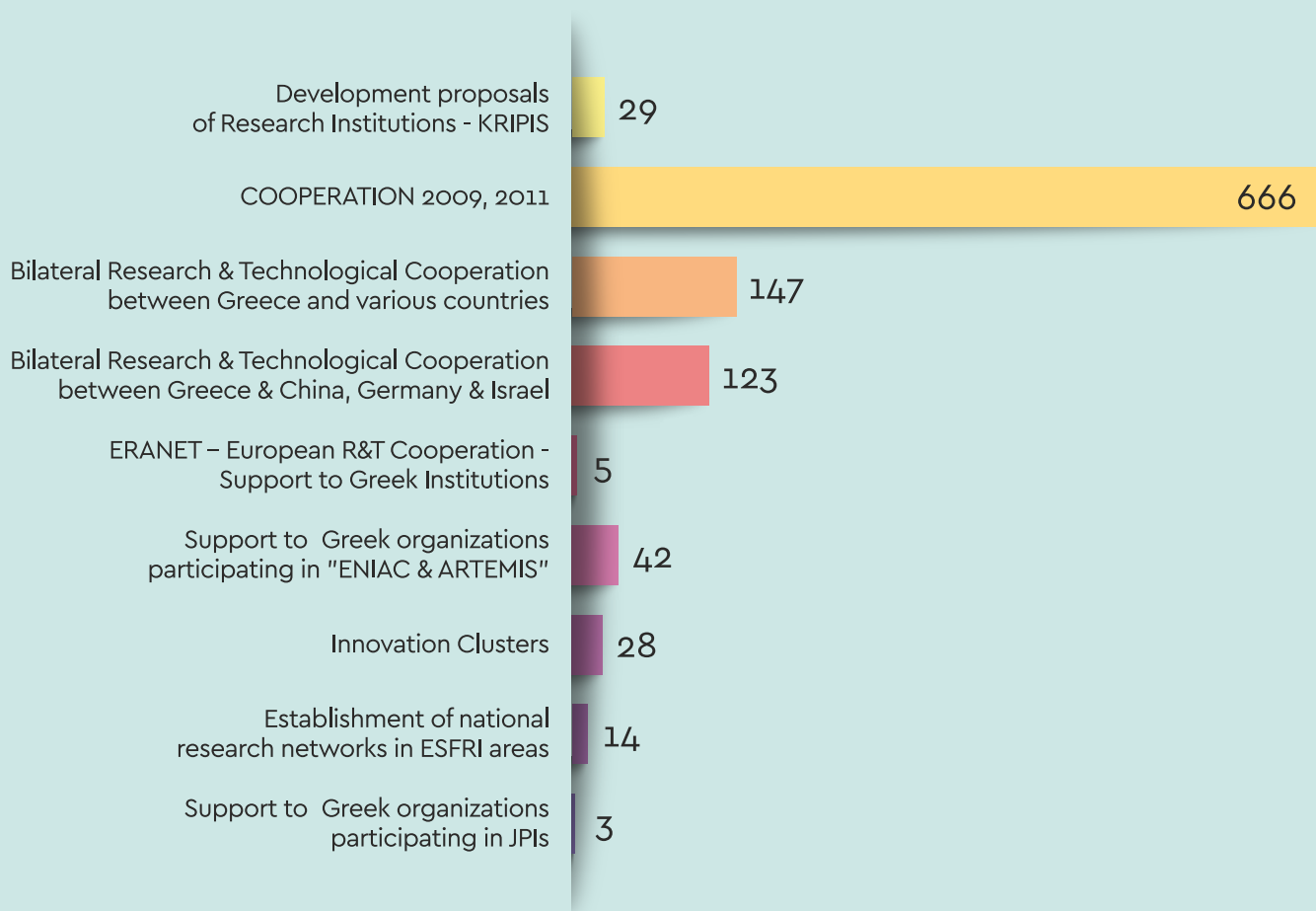
The Actions covered all Sectors of Research, Technological Development and Innovation and all Scientific Fields, while the projects of the Actions were implemented in all Greek Regions.

Funding of Educational Institutions - Research Centers through GSRI Actions (€)



In these Actions,
there have been **more than**
1000
participations
of Educational Institutions / Research Centers

Number of Educational Institutions - Research Centers participating in GSRI Actions





Achievements

- **Development of advanced technologies in the domestic production system, with significant improvement in the same know-how**
- **9.553 scientific publications with 21,8 citations per publication**

Research Excellence: EXCELLENCE published 1.698 publications with 36,41 citations per publication

- **New domestic and international cooperation networks between research organizations and with businesses**

Number of collaborations:

- AUTH **211**
 - NTUA **173**
 - CERTH **149**
 - EKPA **141**
 - Patras University **119**
 - FORTH **102**
- **653 researchers repatriated or institutionalized their relationship with Greek research organizations**

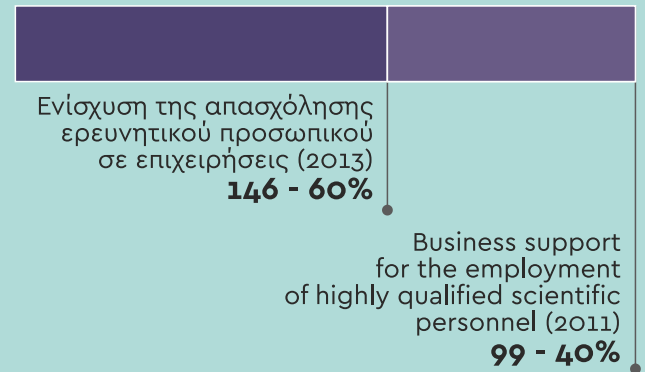
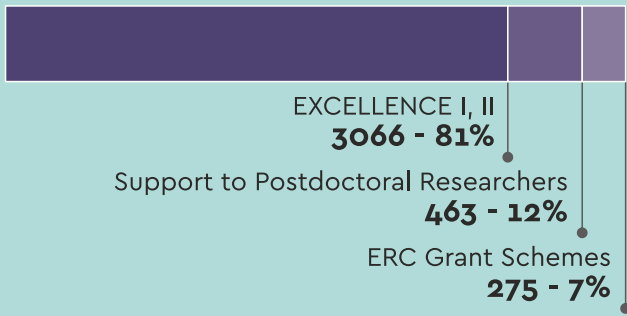


Benefits of Researchers

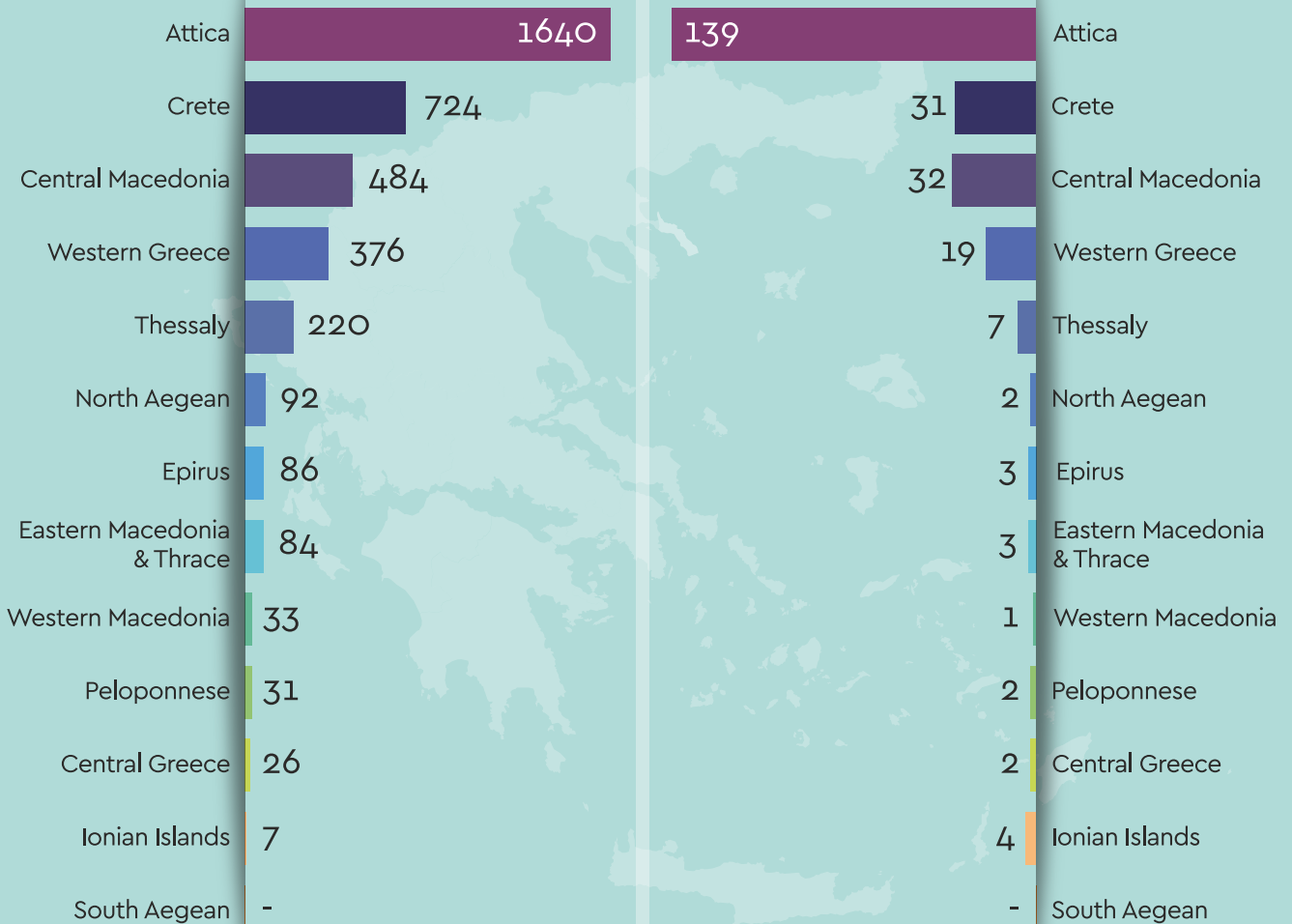
The researchers benefited from the GSRI's Actions with

- Support to their research work
- Funding for their employment in companies

Number of supported researchers per Action



Number of supported researchers per Region



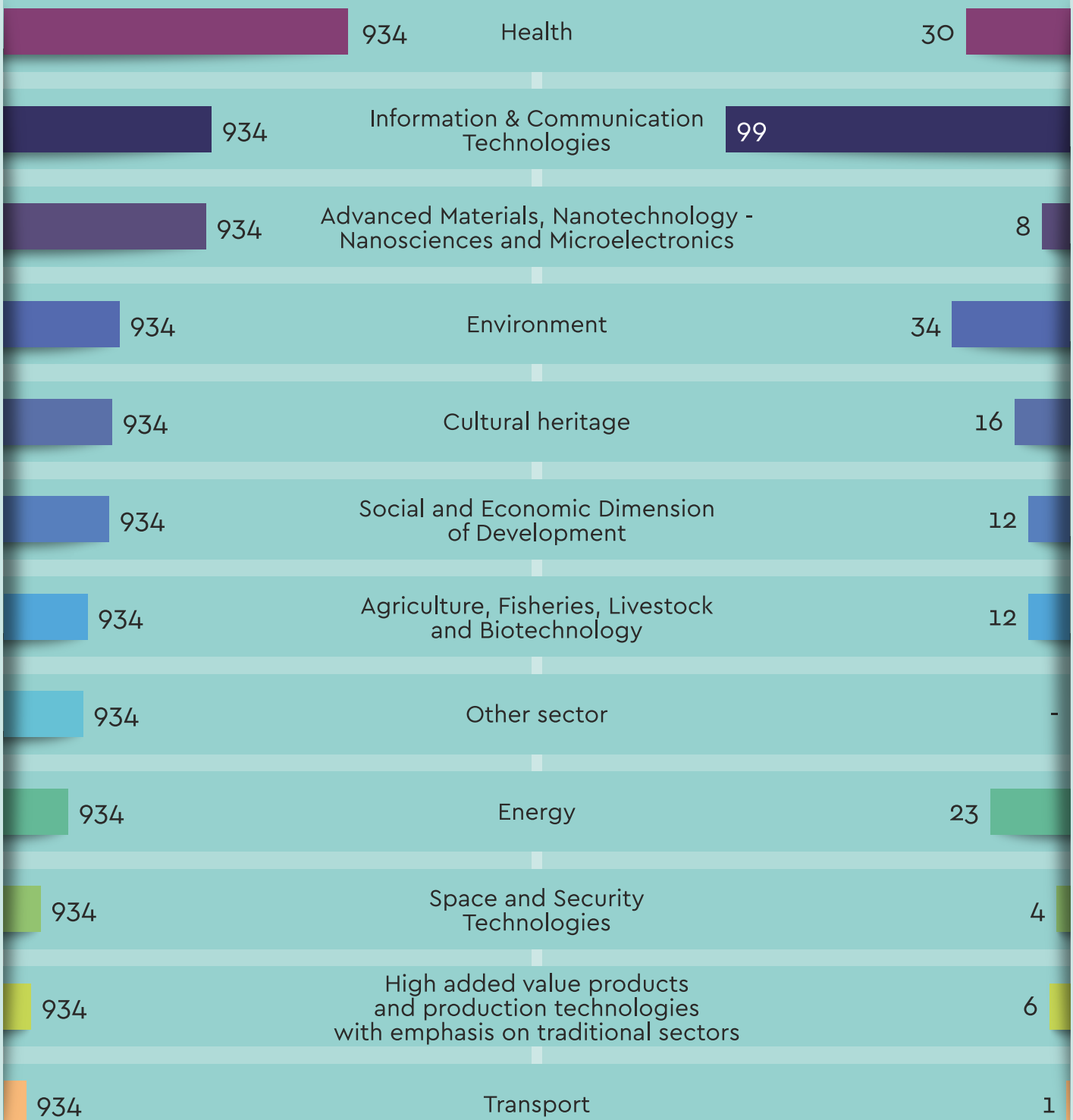
GROUP "SUPPORT TO RESEARCHERS"

GROUP "EMPLOYMENT OF RESEARCH PERSONNEL IN ENTERPRISES"

17.697

beneficiary researchers
in total

Number of supported researchers per RTDI Field



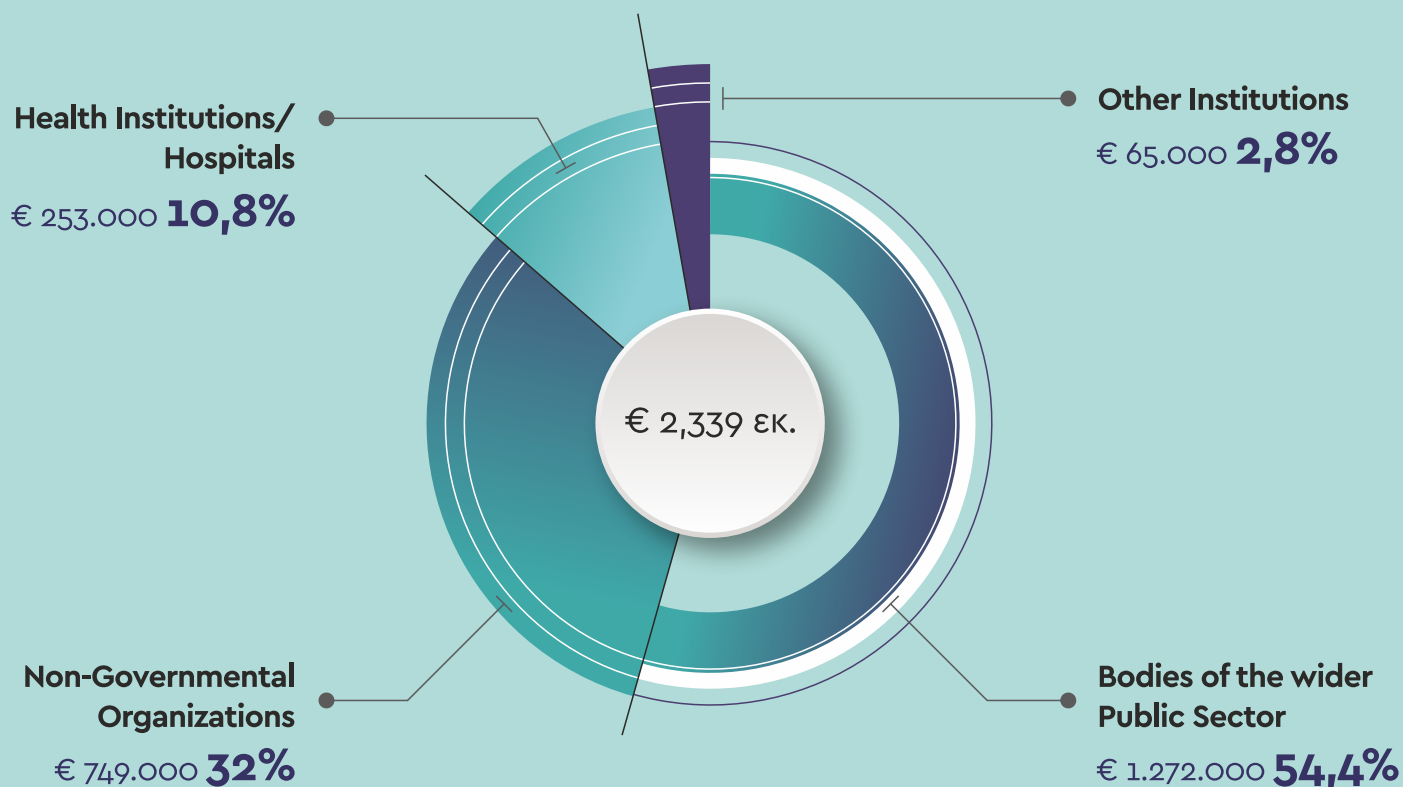
GROUP "SUPPORT TO RESEARCHERS"

GROUP "EMPLOYMENT OF RESEARCH PERSONNEL IN ENTERPRISES"

Benefits for other bodies

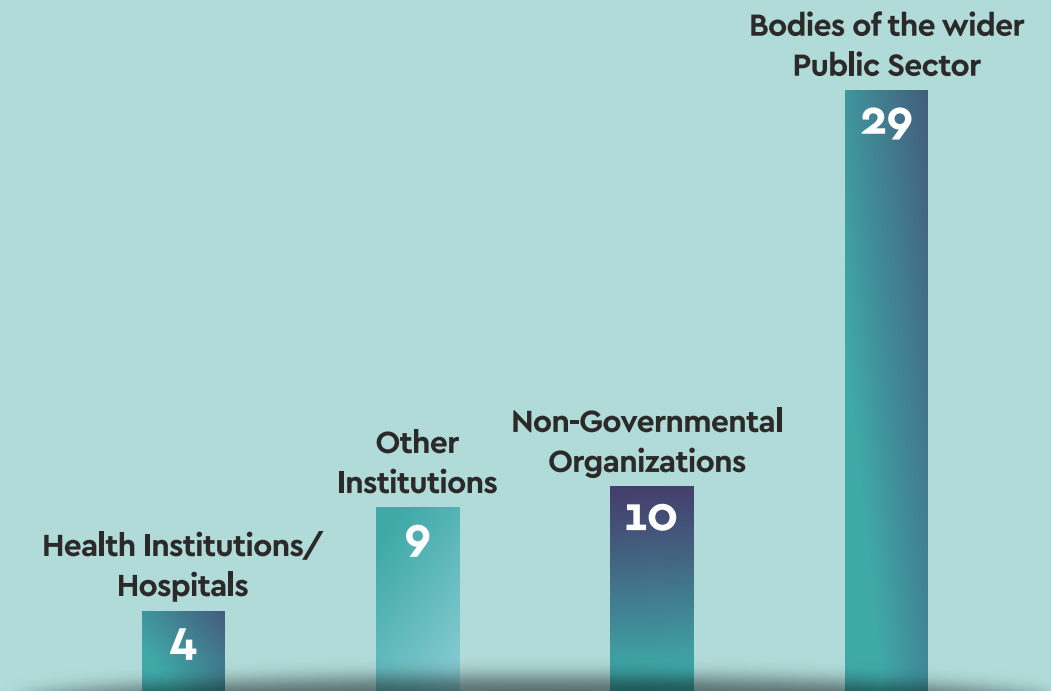
Other categories of beneficiaries include various bodies of the Wider Public Sector, Non-Governmental Organizations, Health Institutions/hospitals and others. Although their funding was limited (0.6% of the total), the results and impacts of the Actions in which they participated were significant, mainly in terms of developing their social work and promoting partnerships.

Funding of Other Institutions through GSRI Actions (€)





Number of Other Institutions' projects in GSRI Actions



Partnerships

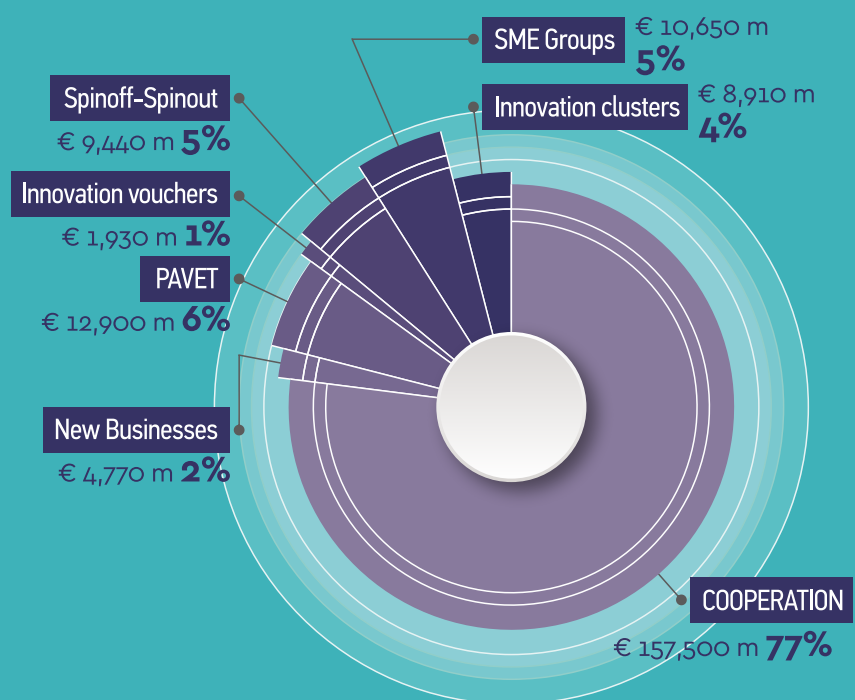
The most important results from RTDI do not come from individuals or single bodies but from **collaborations**, which ensure **complementarities** and **synergies**

SYNERGIES AT NATIONAL LEVEL

Main achievement:

The promotion and consolidation of the mentality change which brought forward the cooperation between Research Institutes, Universities, Industry and Government bodies. The partnership/connection of Research Institutes & Industry has created a favorable environment conducive to research, technological development and innovation, enhancing a concept of collectivity and complementarity in addressing contemporary social challenges and national needs.

- **More than 1000 Networks and Joint Ventures between Universities and Enterprises**
- **More than 1000 joint projects**
- **Use and commercialization of new methods and technology**, based on prototype research and innovation results





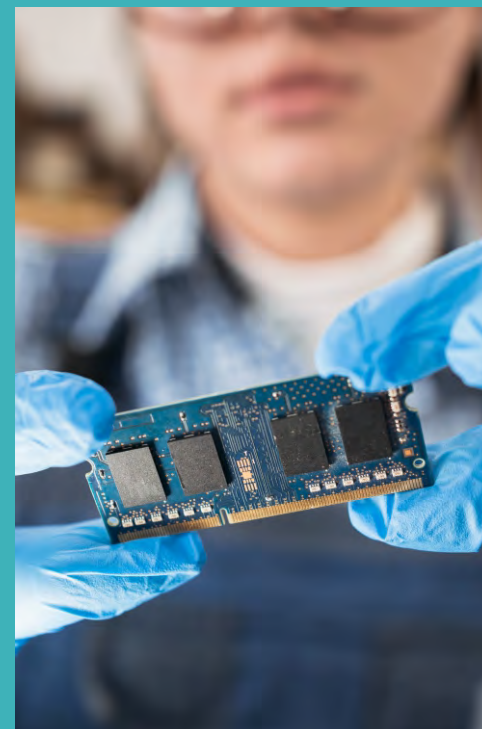
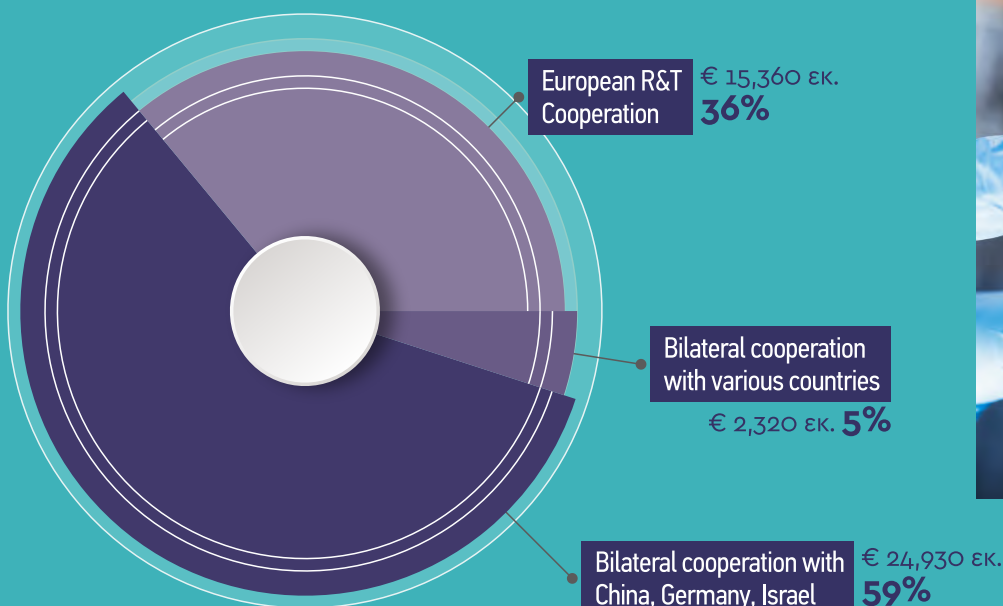
SYNERGIES AT INTERNATIONAL LEVEL

BILATERAL AND EUROPEAN COOPERATION

International cooperation has assisted the transfer of technologies and know-how that could not be achieved by market mechanisms alone. Particularly in the case of industry, the development of cutting-edge technologies cannot take place in isolation but requires interaction and access to know-how provided only through international partnerships and collaborations.

Example: Development of an innovative architecture for variable resistance memory components. Such memories are one of the most emerging categories of devices for <16nm technologies according to the International Semiconductor Technology Roadmap (ITRS).

- Over 200 partnerships with different countries
- Total funding of Businesses, Academic Institutions & Research Centers with €33 million
- Focus on three countries with 90 projects:
CHINA, GERMANY, ISRAEL



Positive Results



of the NSRF

2007-2013 Actions

of GSRI

- The objectives of the Actions responded to the real needs of the Greek economy
- Significant coherence was observed between the Actions, with multiplier effects
- Remarkable research results and innovative breakthroughs were achieved, despite the limited liquidity created by the economic crisis of the period and the limited amount of public funding compared to other EU Member States
- The projects would not be feasible without the financial support of the Actions
- There was a significant contribution to tackling the unemployment of highly skilled human resources
- Important and multiple collaborations, especially between businesses and research organizations was achieved
- Excellent publications in advanced technology fields was noted
- Improved participation of businesses and research institutions in European Programmes was achieved

Suggestions

- Actions that must target real needs
- Focus of future actions on the social and economic challenges of our time and according to the strategy of smart specialisation
- Increase the scope of the Actions:
 - Encourage primary/radical versus cumulative innovations
 - Support the most dynamic businesses with good prospects in international markets
- Continue to support collaborations between businesses and research organizations, with emphasis on quality and strong relation to the needs of the economy
- Greater emphasis on technical support and guidance of beneficiaries during the implementation of the Actions
- Redesign the role of project reporting /acceptance/ review committees
- Enrich the evaluation process for the business support actions with experts with business experience
- Long-term planning of calls for tenders
- Enhance synergies between Actions
- Review the conditions for the advance payment procedure
- Rationalise possible budget cuts during their initial evaluation of projects
- Improve the reporting system and the performance indicators
- Encourage and plan a way to enhance the commercial exploitation of the research results produced by RTDI projects funded by the GSRI
- Increase the effectiveness of Actions by the:
 - reduction of delays in project contracting and disbursements
 - continuous and regular guidance / support / counseling that will provide the required continuity of the rationale of each Action
 - extension of the management role of the GSRI: not limited to accounting but also to continuous technical guidance and consulting to the projects under implementation

for improving the future Action planning



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