

**PROJECT: Monitoring of the progress of the implementation of
National Research and Innovation Strategy for Smart Specialisation
(RIS3) 2014-2020**

**DELIVERABLE: 3rd Progress report of the “National Research and
Innovation Strategy for Smart Specialisation (RIS3) for 2019**

Executive Summary

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Executive Summary

The 3rd Progress report of the “National Research and Innovation Strategy for Smart Specialisation (RIS3) 2014-2020” includes the basic information on the progress of the RIS3 strategy implementation developed by the General Secretariat for Research and Technology (GSRT) until 2019 and more specifically:

- (a) The overall progress of the RIS3 strategy during the period until 2019.
- (b) The interaction of the RIS3 strategy with other national, regional, European, etc. policies.
- (c) The progress regarding the achievement of the objectives and indicators for monitoring the RIS3 strategy.
- (d) Proposals for amendments and acceleration of the implementation of the RIS3 strategy

The strategic objective of the Operational Programme (OP) “Competitiveness, Entrepreneurship and Innovation” is the contribution to the proposed shift in the growth model of the Greek economy from non-tradable into tradable sectors, and cluster development of innovative and out turned sectors with a sustainable competitive advantage. A crucial aspect of the OP is its articulation with the Regional OPs regarding the support of priorities identified through national/regional smart specialisation strategies (RIS3) at the appropriate level. **The national RIS3 strategy is implemented through the OP**, and its purpose is the focused productive reconstruction of Greece underpinned chiefly by research, technological development and innovation to redress regional inequalities and to foster sustainable employment with respect to humans and society, the environment and culture. Moreover, the RIS3 strategy is expected to contribute to the creation of stable employment relationships and, generally, in creating suitable conditions for the efficient use of national human resources.

For the OP, the Thematic Objective 1 “Strengthening research, technological development and innovation” and the Investment Priorities 1a¹ and 1b² are those directly linked to the implementation of the RIS3 strategy, in which case they are monitored to assess the implementation of this strategy. The following Priority Axes of the OP are related to the above Investment Priorities:

- **PA1:** “Entrepreneurship development with sectoral priorities”,
- **PA1S:** “Entrepreneurship development with sectoral priorities (Central Greece, South Aegean)”,
- **PA3:** “Development of mechanisms to support entrepreneurship”,
- **PA3S:** “Development of mechanisms to support entrepreneurship (Central Greece, South Aegean)”,

and include the Specific Objectives **1.1** “Enhancement of business initiatives and partnerships for the development of innovative entrepreneurship in accordance with the National RIS3” and **3.1** “Upgrading and/or Development of research and innovation infrastructures for the development of the country’s innovative capacity to support entrepreneurship”.

Regarding the **Investment Priority 1a, until 31.12.2019, 4 calls for proposals** were published 2 of which concerned the strengthening of research and technology infrastructures (2 cycles), one the reinforcement of high research and scientific level and the exploitation of the results that will occur from them and the last one the strengthening of the innovative capacity of border and island regions and regions with low performance in research and technological development. The budget of the above calls amounted €169,860,000. Half of the budget goes to the less developed regions (47.72%). The percentage of the projects selected for co-funding is considered satisfactory, as it is the 69.29% of the

¹ 1a “Enhancing research and innovation (R&I) infrastructure and capacities to develop R&I excellence, and promoting centres of competence, in particular those of European interest”

² 1b “Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres and the higher education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation, and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies”

budget of the calls for proposals. The largest percentage of the budget of these projects concerns the more developed regions (53,36%). The registered expenditure in the Monitoring Information System (MIS) amounted €8.179.911,00.

The projects selected for co-funding in the context of the above calls for proposals, are in accordance with the horizontal components of the RIS3 strategy referring to the creation of research and innovation infrastructures which facilitate the development of innovative products and services, the production of New Knowledge, the interconnection of science with society and international cooperation. Also, these projects correspond to the Strategic Choice 1" Investing in creating and disseminating New Knowledge" of RIS3 strategy³. It is noted that for one Call for proposals (Support for the Regional Excellence) there are no projects selected for co-funding until the end of 2019.

Regarding the public expenditure budget of the Investment Priority 1a, the percentage of the absorbed expenditure of the Special Account for Research Grants (SARG) was up to 55.13% of the budget of the projects selected for co-funding (62.43% for the strengthening of research and technology infrastructures (2 cycles) and 37.57% for KRIPIS action). The region of Attica, Crete and Central Macedonia have the highest percentage of expenditure absorption (52.30%, 18.45% and 14.89% respectively). The percentage of the registered expenditure in the Monitoring Information System (MIS) in the total budget of all the projects under Investment Priority 1a is only 6.95% (2.33% for the 1st and 2nd cycle of Infrastructure Development action and 20.27% for KRIPIS). For the regions of South Aegean and Central Greece, there are not selected projects for co-funding.

Regarding the **Investment Priority 1b, until 31.12.2019, 13 calls for proposals** were published: a) Action "Research – Create – Innovate" (2 calls for proposals), b) action for Greek bodies that have participated successfully in joint calls for proposals of the European ERA NETS Networks (4 calls for proposals), c) 5 calls for proposals for the action Bilateral, Multilateral and Regional S&T Cooperation between Greece and Germany, Russia, Israel and China, d) Specific actions in the fields of Aquaculture, Industrial Materials and Open Innovation in Culture, e) Cooperative Innovation Formations - 1st Invitation: "Booster Body". Also, there is a pre-publication of the call for proposals "Cooperative Innovation Formations – 2nd Invitation: "Invitation to enterprises".

The budget of the above calls for proposals amounted €621,727,518. Half of the budget goes to the less developed regions (47.93%). The percentage of the projects selected for co-funding is the 59.09% of the budget of the calls for proposals. The largest percentage of the budget of these projects concerns the more developed regions (49,92%). It is noted that the largest percentages of the budget of the projects selected for co-funding refer to the RIS3 priority sectors "Biosciences / Health & Medicines" (18.60%), "Agri-food" (17.51%), "Information and Communication Technologies" (16.48%) and "Culture - Tourism - Cultural and Creative Industries" (13.55%).

The projects that were submitted and selected for co-funding in the above calls for proposals, are in accordance with the horizontal components of the RIS3 strategy referring to the development of innovative products and services, the exploitation of the opportunities offered by emerging technological sectors, the production of New Knowledge, excellence, research. Also, these projects correspond to the Strategic Choice 1" Investing in creating and disseminating New Knowledge" and Strategic Choice 2" Investing in Research and Innovation" of RIS3 strategy.

Regarding the public expenditure budget of the Investment Priority 1b, the percentage of the absorbed expenditure of the Special Account for Research Grants (SARG) was up to 26.33% (€96.731.980,30) of the budget of the projects selected for co-funding. The registered expenditure in the Monitoring Information System (MIS) amounted €20.112.462,48 which the 5.48% of the total budget of the projects selected for co-funding.

It is important to mention that the progress of the implementation of the current Investment Priority's projects depends to a large extent on the "Research-Create-Innovate" Action, as the budget of the its projects selected for co-funding constitutes the 89.17% of the total budget of the Investment Priority's projects selected for co-funding. The same goes for the absorbed expenditure of the Special Account

³ It is noted that except for the call for proposals "Support for the Regional Excellence", in the context of the other three calls for proposals, there was no reference to sectors of the RIS3 strategy.

for Research Grants (SARG) and the registered expenditure in the Monitoring Information System (MIS) (93.46% and 98.28%. accordingly).

Moreover, during the reference period there are **flagship initiatives** undertaken by the Greek Ministry of Education and Religious Affairs which are connected to the implementation of the RIS3 strategy, the management, and the monitoring of which are under the GSRT. In this context, national networks are being implemented in the fields of a) Genetic Neurodegenerative Diseases Research, b) research of Genetic Cardiovascular Diseases and Prevention of Juvenile Sudden Death, c) Agri-food, for the promotion of the qualitative characteristics of traditional products (olive, vine, bee), d) Climate change, for the study and the valid information in tackling extreme natural phenomena, e) Quantum technologies, and also actions for the Research in the Agri-Food Sector of Crete and the Agri-food of the islands of the North Aegean region.

During the period 2014-2019, four actions – coherent to the scope of RIS3 strategy – were implemented by the **Hellenic Foundation for Research and Innovation (HFRI-ELIDEK)** funded by the European Investment Bank. A call for proposals was published by the GSRT in 2016, regarding grant scholarships to doctoral candidates for the elaboration of their doctoral thesis in universities and/or in research centres collaborating with universities in Greece. The budget (public expenditure) amounted to €8.5 million. A total number of 582 projects were approved for co-funding of €12.14 million budget, i.e. 43% more than the budget of the call for proposals. The second call for proposals was published in 2018. The budget (public expenditure) amounted to €10.0 million. A total number of 369 projects were approved for co-funding of €10.9 million budget, i.e. 9.4% more than the budget of the call for proposals.

Additionally, in 2017, a call for proposals was launched, with a budget of €9 million aiming to support the implementation of selected research projects of high scientific quality in which scientific managers are postdoctoral researchers. A total number of 186 projects were selected for co-funding of €12.14 million budget, i.e. far more the initial budget of the call for proposals. The second call for proposals was published in 2018 with a budget (public expenditure) of €16.58 million. The results of the evaluation of the submitted proposals are expected within the first months of 2020.

As far as it concerns **other sources of funding that contribute to achieving the RIS3** objectives, except for the OP “Competitiveness, Entrepreneurship and Innovation”, it is mentioned the following programmes:

- The **Horizon 2020** program: In total, 2,161 projects with Greek participation in the H2020 projects. The European participation in these projects were up to €1,179 million. The total number of the Greek participants is 3,836. H2020 program attracts high-level participants from the higher education, research and private sectors and from a wide range of fields and subject areas. The main beneficiaries of Horizon 2020 for 2019, are higher education and research organizations, which together received 64% of Greece's funding, while the private sector received 31% (2,2% more than the period 2014-2018)
- The **Operational Program "Development of Human Resources Education and Lifelong Learning"** (OP ANAD EDBM): The State Scholarship Foundation, under the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020) with priority axes 6, 8, 9, co-financed by the European Social Fund, implements subprojects on three (3) scientific fields (Natural Sciences and Engineering Sciences, Life Sciences, Social and Humanities) for the purpose of doctoral dissertation and postdoctoral research in Greece. A total of 3,345 valid applications were submitted in the three scientific fields, out of which 1,401 were funded. The results of the 2nd call for proposals for the postdoctoral research are expected.
- **LIFE Program**: In 2019, 6 projects with Greek participation were approved, of which 3 projects have a Greek coordinating body. These projects number 14 Greek entries which receive a budget of € 4,25 million. In total and until 2019, the approved projects with Greek participation amount 71 of which 36 have a Greek coordinating body. 147 Greek different entities participate in these projects, receiving a total budget of €44,57 million.
- **URBACT Initiative**: In 2019, 23 networks were approved for funding by URBACT III. The Greek participations in these projects amount 13 participants. In total for the period 2014-2019, the

Greek participations in URBACT III in 20 approved projects, amounted to 23, with a total budget of € 1,369,458.00. Only one project is headed by a Greek partner RIS3 approach to addressing and responding to global challenges is open to all research and innovation actors, such as cities and regions, which could act as 'innovation workshops/hubs' to implement new ideas and concepts. This is where the RIS3 connection to this program comes from. 46% of approved projects are directly related to RIS3 domains and more specifically, in the fields of urban transport, agri-food, culture, energy, ICT. The circular economy is the most representative field in the approved projects of 2019.

The analysis of the findings of participants in the other sources of funding are in fact less entrepreneurial than initially envisaged. With limited exceptions, most projects are led by universities and research organisations rather than local business firms, leave alone subsidiaries of large multinational corporations. Furthermore, civil society organisations are underrepresented. In general terms though, the findings demonstrate a link of Horizon2020 project proposals and projects funded by the other initiatives with the relevant RIS3 priorities, as required.

As far as it concerns the **strategy output indicators**, there is already a significant overlap of target values for the majority of the programme's indicators. For the support of investments, the percentage of the coverage of the target value of the indicators referring to the number of companies receiving support (CO01) or grants (CO02) and to the number of new start-ups (CO05) is 150%, 160% and 161% respectively. For the reinforcement of the research and innovation, the percentage of the coverage of the target value of the indicators referring to the number of new researchers in supported entities (CO24), the number of researchers working on improved research infrastructure facilities (CO25) and the number of companies collaborating with research institutes (CO26), is 86%, 160% and 125% respectively. In contrast to the preceding ones, the percentage of the coverage of the target value of the indicator relating to the number of joint R&D projects with other countries (with or without EU coordination) (T4204) is 27%. Finally, the target value of the 'Research Infrastructure Reinforced' indicator (T4225 / SO033) has been covered 100%.

For the **strategy outcome indicators**, the expenditure on innovative business activities with product innovation and/or process (as a percentage of GDP), as well as the intensity of Research & Development costs increased from 2014 to 2017 by 0.28% and 0.3% respectively. The gross value added in high value-added industries, shows a gradual reduction in the years 2015 and 2016, but an increase in 2017. The number of scientific publications in international journals are relative steady, while the average reporting per publication of Greek researchers has gradually increased in the periods of 2010-2014, 2011-2015, 2012-2016.

Based on the **Innovation Union Scoreboard (IUS)**, Greece ranks 2nd among the 28 countries in the European Union (EU) in terms of innovation growth in the period 2011-2018. Greece has improved its performance in innovation but has taken the 20th place in the European Union in terms of innovation performance, according to new data from the European Innovation Scoreboard 2019, published by the European Commission. Greece is a moderate innovator. Innovators, Linkages, and Employment impacts are the strongest innovation dimensions. Greece performs particularly well on Innovative SMEs collaborating with others, SMEs innovating in-house, and SMEs with marketing or organizational innovations. Intellectual assets, Innovation-friendly environment and Finance and support are the weakest innovation dimensions. Greece's lowest indicator scores are for Foreign doctorate students, Venture capital expenditures and PCT patent applications.

Finally, the current report provides some **critical success factors for the successful implementation of the RIS3 strategy's Actions**. The main challenges and ways of dealing with them include management issues and quality aspects of the implementation of the comparative actions.

It should be mentioned that although the institutional environment in which the RIS3 Strategy is implemented has not changed dramatically in 2019 and the challenges that existed in the previous year remain almost entirely, the comparison between the data of 2018 and 2019 highlights the substantial progress achieved.

In 2019, one (1) new call for proposals was published for the Investment Priority 1a and five (5) new calls for proposals and one (1) pre-publication for the Investment Priority 1b. The total number of call for

proposals from the beginning of the programming period until the end of 2019, was four (4) for the Investment Priority 1a, while substantially doubled for the Investment Priority 1b from 7 to 14 (13 calls for proposals and one pre-publication).

For the Investment Priority 1a, SARG payments almost doubled in 2019, although there were no new projects, while the available budget for project implementation was increased, through the publication of an additional call. For the Investment Priority 1b, in 2019, there has been significant progress in activating the resources of Investment Priority 1b by increasing the budget of calls for proposals by 40%. In addition, there was an increase in the number of projects selected for co-funding and the amount of Public Expenditure of the projects selected for co-funding by 47% and 13% respectively. There is a particularly large increase in the registered expenditure in the MIS, amounted to 142% over the last two years.

These results can be attributed to the experience gained by the Intermediate Bodies in the management of the calls for proposals but also to the maturation of the relevant actions, but in any case they remain the result of the hard work of the GSRT and the EPANEK staff which have transferred to the Public Sector, the results-based management culture.

In a nutshell some indicative challenges analyzed are the following:

- The current economic environment and the lack of liquidity making it difficult for the (beneficiaries) to pre-finance their projects.
- The operational capacity of the two Intermediate Bodies to manage a multitude of actions that will increase in the future, together with the number of beneficiaries-enterprises to be supported in project monitoring.
- The operational capacity of the beneficiaries to meet the management obligations specified in the financing decisions and the Management and Controlling System.
- The challenge of adequate GSRT staffing remains relevant. Also, the transfer of the GSRT from the Ministry of Education and Religion to the Ministry of Development and Investment in 2019, underlines the emphasis placed on linking research with innovation and business to enhance the competitiveness and productivity of the Greek economy, while promoting the need to strengthen the communication of the GSRT with other relevant bodies, which will cooperate for this purpose.
- The proper scheduling for launching relevant calls so that there is no overlapping with similar 'competing' actions that have been announced or have being implemented, which would discourage potential beneficiaries from participating.
- The implementation of a proper monitoring mechanism that will guide the adaptation of corrective actions at both the target level and the process level for the development and implementation of RIS3.
- The EDP, which played a critical role in the identification of priority areas throughout the programming period, has been successfully completed. The challenge is to use this process in the preparation of the RIS3 Strategy of the next programming period, improved in terms of the participation of representatives from the civil society sector and considering the developments in the wider socio-economic environment.
- The avoidance of the research actors' activity to be entrapped in the sectoral specialization and to mobilize them so as to combine the priority sectors with RDI and to increase the synergies between public and private investment.

Aiming at the encountering of the challenges identified above but also at making some recommendations, the following points are underlined:

- The strengthening of the staff of the GSRT both in number and in specialties it is crucial in order to meet the requirements in the increasing workload and in the integration - implementation of actions in the future, as well as to exercise all its responsibilities effectively.
- The close cooperation of the GSRT with other General Secretariats, Services and bodies that will contribute to the preparation of the new RIS3 in order to achieve the effective planning of the strategy to which the GSRT can contribute substantially and decisively with its experience and know-how at all stages of planning and implementing a RIS3 strategy (planning, consulting, EDP, strategy implementation, strategy monitoring).

- The monitoring and evaluation system of the RIS3 strategy is proposed to include indicators for monitoring the management competence of the bodies responsible for monitoring and evaluating the RIS3.
- The proper scheduling of invitations and the avoidance of duplication of similar proposals by the Regional Operational Programmes will enable candidates who do not have the management competence to submit many proposals and to better structure the objectives and the concept of their project.
- The call for proposals texts and the implementation guides should be 'lighter' focusing on the achievement of the objectives and the allocation of funds.
- Clarity / Appropriateness of strategy regarding the needs and challenges in the fields of environment, employment, social protection and welfare - Relevance to policies at European level. The RIS3 strategy should include special sectors that have been included as priorities in European programs in which there was Greek participation.
- The design of a smart tool for strategy development will provide an overview of the strategy's priorities enabling other key stakeholders (SMEs, start-ups, researchers) to be placed and look for potential partners for cooperation, to promote innovative product players, to allow comparisons of RIS3 priorities across Europe so as to better understand how other regions and countries develop their innovation strategies.
- The design of a methodological framework for monitoring and governing RIS3 - at the national level by the GSRT and at the regional level by the respective Regions / EYD - will strengthen the RIS3 strategy in terms of its implementation but mainly in terms of its recognition as a development tool.
- The introduction and promotion of innovation intermediaries (innovation support services) that will connect innovation bodies (SMEs, researchers, NGOs, etc.) to an idea that can be turned into innovation. They help identify and refine innovative ideas, find suitable partners and funding tools, and identify potential roles for each partner.