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EVALUATION OF THE HELLENIC FOUNDATION FOR RESEARCH AND INNOVATION (HFRI)

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This report presents the findings and conclusions of the assessment and evaluation of HFRI's activities, operational processes, and impacts during its first period of operation, in relation to the funding received and set in the context of international practice. Based upon the evidence collected, recommendations are produced for the further development of the Foundation.



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Summary

This is the Final Report of the Evaluation of the Hellenic Foundation for Research and Innovation (HFRI). Technopolis Group, supported by a panel of four experts, carried out this evaluation in the period September – December 2021. The study was commissioned by the European Investment Advisory Hub (EIAH) of the European Investment Bank (EIB), upon request by the HFRI.

The overall objective of the evaluation was to carry out an assessment and evaluation of HFRI's activities, operational processes, and impacts during its first period of operation, in relation to the funding received. The aim was to produce recommendations for further development of the Foundation.

The findings are based on a mix of quantitative and qualitative methods, encompassing desk research, data review (HFRI portfolio and proposal/project data analysis), bibliometric data analysis, a stakeholder survey (successful and non-successful applicants), an expert panel site visit, stakeholder interviews, and an HFRI self-assessment exercise.

Attainment of the objectives

HFRI was founded in 2016 with the objective to “promote Research and Innovation in Greece and more specifically to support and assist unrestricted research without any thematic or geographical limitations, having Quality and Excellence as a unique criterion.”

In the first four years of its operations (2017-2021), HFRI has succeeded in reaching close to all its operational objectives, setting up its governing and operational bodies, ensuring additional financial resources, and organising the funding distribution to the research community, based upon excellence and meritocracy. An adequate staff employment has been its major challenge.

The high-level commitment of the research community, investing considerable time and effort, as well as the commitment and capacities of HFRI's staff have been the major drivers for this success. As such, it testifies to the importance of HFRI's activities for the Greek research system.

HFRI has succeeded in attaining its strategic objectives. To date, the HFRI has distributed 50% of its total budget. Its funding decisions, based on excellence and merit, provide important opportunities for doing unique/original research. It provides support for the personal development of Greek researchers, at all stages in their career and in all fields of research.

From a gender equality perspective, overall 35% of the total approved funding in 2016-2020 was to the benefit of female researchers. This included slightly more than 50% of the budget for PhD scholarships but only about 20% of the budget for the Faculty Member and Equipment calls. These data, however, broadly reflect the male/female distribution in applications.

HFRI contributed to constraining the brain drain phenomenon, facilitated the return of early-career researchers, enabled the renewal or acquisition of high value research equipment, and supported participation of Greek researchers in Europe-wide research infrastructures in the field of Social Sciences and Humanities. Through the science & society calls, the HFRI aimed at responding to societal needs and disseminating scientific knowledge in society.

An important added value is the continuity in funding that the Foundation ensures, allowing for strategic planning of the research activities, at a personal and institutional level.



Bibliometric data show that HFRI funding has allowed for a significant sharing of the knowledge gained by the researchers funded. The high quality of the research results in the fields of physical sciences and communication science, most of them published in top ranking journals, suggests a significant contribution of HFRI to the strengthening of research competitiveness in the Greek system.

Operational efficacy as an independent research funding organisation

Based upon data related to its first two years of full operation (2019/2020), HFRI's cost of administration is 5% of its grants budget, which is within the international norm and indicates good operational management.

HFRI has the legal status of a private non-profit organisation. It has autonomous decision-making power on strategy and its implementation that is standard in international practice. However, *de facto* HFRI has the status of a public administration body. For administrative, financial, and human resources management matters, it is expected to apply the legislation for the public administration sector. This arrangement has significant repercussions on its operational functioning. It causes delays in the implementation of its operational decisions and causes HFRI's current understaffing.

The government's recent decision to abolish the deputy director position deprives HFRI of its internal capacity for administrative oversight. Internationally, basic research funding organisations have a dual leadership structure, consisting of a scientific director or president and an administrative director. Both skills (scientific background as well as management expertise) are needed to run such an organisation.

Overall, HFRI applications for funding had a success rate of 15% in 2016-2020. This is low. Internationally, the scientific community tends to regard a success rate between 20 and 33% as optimal and a guarantee of fair competition. Many research councils, however, operate with lower rates. Success rates below 10%, however, are generally considered unacceptable since they distort the balance between the costs and benefits of proposal writing.

There are significant differences among the different instruments. Proposals for PhD scholarships and ERC grants reached good to excellent success rates (27% and 60%); the "1821" Science and Society call had a low success rate (13%). For all other instruments and programmes, the 2016-2020 calls reached very low success rates (10% and under). This is worrying especially for the Faculty Member and Postdoc instruments. The success rates of the high-quality proposals confirm that these programmes were underfunded: only about 25% of high-quality proposals was retained for funding. Particularly underfunded were the thematic programmes, specifically the Research, Innovation and Dissemination Hubs programme were only 7% of the high-quality proposals were funded.

The underfunding of HFRI compared to the needs is even more apparent when comparing HFRI's 2019 budget to the budget of other research councils in countries of a similar size in population. Both in terms of number of researchers in the country and size of the country's population, HFRI's budget was considerably lower than the budgets in the other countries.

HFRI has only recently started its monitoring operations. As it is currently defined, the project monitoring framework is good practice, even though there are signs of unnecessary rigidity in the administrative and financial processing. Nevertheless, the monitoring framework rightfully goes beyond a mere auditing approach and the involvement of external evaluators is intended to provide insightful and quality feedback for the projects' evaluation.

What seems to be lacking is a results-based evaluation framework at the institutional level that guides the collection and analysis of monitoring data, going beyond the immediate outputs



and outcomes. Such an evaluation framework would provide HFRI with the needed 'strategic intelligence' to guide and eventually adjust the scope of its funding and its operations, and to ensure its accountability, i.e., its reporting on the value of its activities and the relevance of the investment – to national policy makers and society at large.

HFRI has dedicated significant efforts in ensuring quality communication and service delivery to its targeted beneficiaries, with very good results. Interviewed and surveyed beneficiaries were highly satisfied with the clarity of the information provided and the user-friendliness of the communication channels, as well as the availability and competences of HFRI staff in their service delivery. The communication strategy goes beyond the mere delivery of information and includes the creation of an online community to develop a dialogue on research matters and activities. While the close to exclusive focus on the research community is understandable in this first stage of HFRI's activities, based on international practice one would expect a stronger focus in HFRI's communication strategy on enhancing public understanding of science.

HFRI set-up and operations in the international context

The structure of HFRI's governance bodies and their mandates are largely in line with good international practice. The role of the Advisory Committee is unclear and the proportion of women in the Scientific Council extremely low. The HFRI adheres to international practice by establishing a clear separation between the Scientific Council and the administration in terms of responsibilities and tasks.

As in other research councils internationally, the HFRI instrument portfolio includes the normal repertoire of 'basic research' funding instruments. The funding streams for PhD students and early-career researchers are in line with the international trend among research councils to use non-thematic funding instruments, which aim to support and develop the structure of the national research community. Seeing the national context and its fragmented R&D landscape, a bottom-up and non-thematic centre-of-excellence funding instrument to build up sustainable research groups with critical mass, across universities and research institutions and as an incentive for defragmentation would be an appropriate next step for the HFR.

There are, however, considerable limits to HFRI's autonomy compared with international practice. The detailed and exhaustive description of HFRI's tasks, structure, and processes *de facto* implies that little to no space is given to the HFRI General Assembly and Scientific Council for strategic decisions and the introduction of change.

In addition, there is a fundamental discrepancy in the description of HFRI's mandate between the Annex to the EIB loan agreement and the HFRI Founding Law (and the expectations set based on it). The description in the EIB Loan Agreement aligns the HFRI with the internationally normal tasks of a research council, funding investigator-driven basic research and ensuring the diffusion of scientific knowledge in society. This also reflects the 'division of labour' that has *de facto* been established in the Greek R&I governance system for the public funding of research with the HFRI as research council providing support for individual researchers and non-thematic research projects (without geographical criteria), and the GSRI as an innovation agency being in charge of (predominantly ESIF-funded) support for applied research and industry-oriented innovation. The Founding Law, instead, words HFRI's mandate in more general terms ("the promotion of research and innovation") and assigns tasks to the HFRI that are typically competence of an innovation agency ("to support, through lump-sum funding, the creation and operation of start-ups to capitalise on research results" and to cover "costs for the protection of intellectual property rights").



Quality of the project selection and assessment processes

HFRI, like almost all independent research funding organisations, uses a peer-review system to assess applications. Its current approach reflects international good practice and uses the ERC as a model. The HFRI shows a high level of transparency, implementing all standard measures. The quality of the evaluation reports is an issue to address.

HFRI ensures fairness through its processes and structures aimed at avoiding 'scholarly bias', such as the rotation system to reach the appropriate balance between continuity and renewal of panel membership and the demand-driven distribution of the call budgets over the disciplinary areas. Other components are the right to object to specific reviewers and the right to appeal panel decisions ('redress'). The volume of appeals submitted and accepted is surprisingly high. While they predominantly relate to matters of detail and have little or no effect on funding decisions, they also considerably influence HFRI's time-to-grant performance. To strengthen consistency in the appraisal processes over time, lessons learned from the experience gained should now result in the publication of process descriptions and criteria definitions. Finally, there is room for improvement in the definition of the PI assessment criteria.

Peer review-based evaluation systems typically set up a hierarchical system of panels and sub-panels. HFRI has nine panels which we consider too many, considering the limited size of the country and the budget. Data also show a considerable imbalance between the panels in terms of the number of proposals to handle and sub-panels to set up. A revision of the current categorisation of the fields, more in line with the 'original' OECD FORD classification, would allow for an improved spreading of the assessment work over these panels and the reduction of their number. The proportion of female evaluators/experts is extremely low according to all international standards and the involvement of international reviewers/experts very limited.

HFRI's proposal assessment processes are very closely aligned with the ones adopted in the ERC. However, what works for the ERC may not always be the ideal solution for national research councils, especially smaller ones as the HFRI. The current two-stage evaluation procedure is over-complex for the current types of instruments that the HFRI funds, and too lengthy. It therefore contributes to the major criticism of HFRI, i.e., its time-to-grant. In addition, a clearer division of labour between remote reviewers and panel members would be appropriate.

Various challenges lay at the basis of HFRI's particularly long time-to-grants. The HFRI has made substantial efforts to alleviate some of these problems but should continue its efforts and consider implementing additional measures.

Image of the HFRI in the national and international R&I community

The most prominent achievement of the HFRI is that it established its legitimacy in the eyes of the research community, based on the trust that its assessment processes are fair, and its funding decisions based on merit. The image is one of a research council funding high quality research and adopting funding schemes that are of high importance and value for the national research system and society at large. HFRI has strengthened research capacities in the country and improved researchers' career growth prospects. HFRI funding also supported the creation of critical mass, in scientific areas of competitive advantage, and allowed for the conduct of interdisciplinary research.

HFRI's relationship with the international R&I community has predominantly been with the Greek diaspora, seeking the possibility for closer collaboration.



Alignment of HFRI financing with the broader Greek Science, Technology, and Innovation (STI) priorities

In 2016/2017, the Greek national innovation system was confronted with a major challenge: the loss of skilled human capital, i.e., brain drain. It was recognised as a key challenge by national policymakers and various policy measures were designed to refrain and reverse the brain drain.

HFRI funding successfully tackled the primary drivers for the brain drain: the lack of career prospects and, closely related, the lack of funding for research. Recognising the urgency of the situation, HFRI took multiple measures not only to be able to fund the highest possible number of researchers at risk of emigrating (PhD graduates and Postdoctoral researchers), but also to ensure adequate funding opportunities for younger faculty members. Various elements of evidence emerged during our study on the positive effects of HFRI's funding to constrain the brain drain and ensure the growth of research career opportunities.

A primary tool for HFRI to support the national Smart Specialisation Strategy 'Reinforcing research activities' intervention area was its funding - seeing the 'division of labour' with the GSRI, this also included the focus of its funding on fundamental research. Not only did HFRI fund high quality research, leading to a considerable volume of publications, often published in top quality journals, but by providing an arena where researchers and research proposals compete, HFRI set a high standard for research quality – not only for the funding it provides, but also a standard against which research-performing organisations judge quality, and it therefore tends to quality-assure the national basic research effort.

The value of HFRI funding goes well beyond the benefits for the research system, though. It enhances capacity in fundamental research that meets national needs. HFRI makes it possible for researchers to obtain external funding for research in the social sciences and humanities, which are important for social development, and which play a growing role in work addressing the so-called societal challenges.

A primary objective of the national policy in 2014-2020 was to strengthen the competitiveness of the Greek economy. In this context, a funder like HFRI is an essential component of any effective national innovation system, and one whose importance increases with economic and social development, during which production and consumption become increasingly knowledge-based, and the scope to remain competitive while relying on imported knowledge declines. Typically, therefore, countries increase their basic research effort when they move from technology catch-up to looking for ways to get ahead of competitors in the more advanced countries.

Conclusions and recommendations

HFRI is the first organisation of any size to fill the 'basic' research funding gap in Greece. HFRI is nonetheless a small organisation with a small budget, not yet sufficient to meet the needs of the current Greek system, let alone the growing needs for research as Greece continues its economic recovery and along the path of development. The current underfunding, and the accompanying low success rates, may cause serious problems for the whole system and reduce the quality of HFRI's review process, lead to distrust and demotivation of applicants and ultimately, undermine HFRI's legitimacy. An increase in its funding budget is critical for HFRI to maintain its international standards, continue supporting the Greek research system, and prevent brain drain,

We recommend the Greek government significantly to increase its contribution to HFRI from national sources compared to the amount granted in the 2016-2021 period.



In the national R&I governance system, HFRI has the function of basic research funding organisation. There is *de facto* a clear division of roles with the GSRI which acts as the country's innovation agency. The current description of HFRI's mandate in the Founding Law, however, undermines the coherence and complementarity that has been established between these two research funding bodies, attributing tasks to the HFRI which in international practice, are typically in the competence of an innovation agency. In addition, it fails to make an explicit reference to HFRI's function as a research council, focused on investigator-driven basic research and science communication to society.

HFRI's Founding Law appears to be unfit for purpose, specifying processes, routines, and structures in such a level of detail that it *de facto* deprives the HFRI of the right to determine its own organisation chart and institutional framework, thus considerably limiting its autonomy.

The recent amendment to the Law, abolishing the Deputy Director function and setting the profile of the (new) Director in predominantly scientific terms, appears to be based upon an underestimate of the need in a research council for a dual leadership (scientific and administrative).

Further, despite its legal status as private non-profit organisation, HFRI is obliged to apply the public sector administrative, financial, and human resources regulations. This causes inflexibility and long delays, and most important, is responsible for HFRI's current understaffing. The latter is a matter of the highest urgency.

We recommend the Greek government formally to recognise HFRI's function in the Greek R&I system as the public funding organisation responsible for investigator-driven basic research and the communication of scientific knowledge to society, complementing the research funding tasks of the GSRI, in line with international practice. In the mid-term, a **permanent position** for the HFRI should be envisaged, funded by the Greek state.

The Founding Law needs revision, bringing it more in line with international practice and foreseeing the use of dialogue-based performance agreements. It should give HFRI the status of an independent agency, tie it to achieving a small number of high-level goals, and otherwise make it autonomous in day-to-day practice. HFRI's task should nonetheless be tightly enough defined to prevent it from moving from researcher-initiated research into other areas, and sufficiently protected to make it hard for other interests to raid its already limited resources.

In the very short-term, an amendment to the Law is needed that excludes HFRI from the provisions of staff hiring, promotion, salaries etc that apply to the public administration sector.

The recent abolition of the Deputy Director function should be re-considered.

HFRI's governance structure, funding and non-funding processes are in line with international practice, with due attention to the key principles of transparency and fairness. HFRI uses ERC as a model for its operational processes, which is widely seen as the 'gold standard' in the international community. HFRI has succeeded in gaining legitimacy in the eyes of the community while ensuring continuity in the highly needed basic research funding and good operational management. It is **a remarkable achievement**.

There have been some inevitable teething problems and lessons to be learned. A refinement of HFRI's strategy and processes is therefore appropriate. The adaptation of some processes to the specific context of the Greek research community and its current state of development would also be beneficial.

In relation to its **non-funding activities**, we recommend HFRI to devote more attention and effort to collecting strategic intelligence on the research system that is needed for its own strategy and in support of national R&I policymaking. A closer contact to overall R&I policy and a more intense collaboration with the bodies in the R&I governance system that collect and have access to strategic intelligence would be beneficial from this perspective.

We *highly* recommend HFRI to develop an institutional evaluation framework that is result-oriented and can serve its needs for accountability towards the government and the Greek citizens. This evaluation framework should inform the (projects) monitoring framework and its implementation. We also encourage HFRI to improve its communication to the public, to enhance the public understanding of science.

In relation to the **funding instruments**, we recommend the HFRI to take up its 'broader' role of a research council in the Greek R&I system, like research councils internationally, and aim to support and develop the structure of the national research system. We suggest starting with a centres-of-excellence programme as a tool for capacity-building and de-fragmentation of the Greek (basic) research system.

In relation to its **peer review-based evaluation processes**, we recommend the HFRI to ensure higher quality of the evaluation reports and improve the descriptions of the evaluation criteria so as to increase transparency and reduce the high number of appeals on matters of detail. The proportion of international experts as well as women among both reviewers and panel members should be increased. Accompanying measures that can be taken against the low success rates, such as proposal bans for persons who submitted proposals with exceptional low quality, should be discussed with researchers and experts. We also suggest reconsidering the current categorisation of the disciplines, spreading the assessment work more equally over the panels and reducing their number.

We recommend the HFRI to adopt a one-stage procedure for all its instruments. In particular for the Post-Doc and Faculty Member calls, there should be a clearer division of labour between remote reviewers and panel members, with remote reviewers taking care of the assessments of the scientific quality while the panel members assess the proposal in its entirety and set it in context. We recommend the HFRI to make more use of scientifically qualified administrative staff in the selection of the panel members and external experts, under the authority of the Scientific Council. We also suggest revising the reviewers' remuneration policy to keep the review process costs within sustainable limits.

Various of the above-mentioned recommendations and suggestions aim at addressing (also) the major criticism to HFRI, i.e. its time-to-grant. We recommend installing additional measures such as launching the search for panel members/reviewers prior to the call deadlines and a better spread of the 'large' calls across the year, in order to avoid peaks in the workload for both administration and applicants.

We *highly* recommend the HFRI to establish a stronger connection and exchange of experience with other research councils in Europe, in particular the smaller research funders. Most of these organisations are also members of Science Europe, which offers various international learning opportunities.



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1 Introduction

This is the Final Report of the Evaluation of the Hellenic Foundation for Research and Innovation (HFRI).

Technopolis Group, supported by a panel of four experts, carried out this evaluation in the period September – December 2021. The study was commissioned by the European Investment Advisory Hub (EIAH) of the European Investment Bank (EIB), upon request by the HFRI.

The Final report presents the findings from our analytical activities and provides our conclusions and recommendations, taking account of the feedback and comments received from the EIB officials and the HFRI during the validation workshop on December 7, 2021.

1.1 Objectives of the study

The overall objective of this assignment is to carry out an assessment and evaluation of HFRI's activities, operational processes, and impacts during its first period of operation, in relation to the funding received. The aim is to produce recommendations for further the development of the Foundation.

The evaluation questions defined in the Terms of Reference are:

- To what extent has HFRI **achieved its objectives**?
- To what extent has HFRI achieved **operational efficacy** (including appropriateness of operational structure, governance, management processes and resources) as an independent research funding organisation?
- To what extent is the **setup and operations** of HFRI in line with international/good practices?
- Are the project **selection and assessment processes** transparent and effective, and do they result in the selection of the best projects?
- How is HFRI **regarded** in the national and international research and innovation community?
- To what extent is HFRI financing in line with the broader Greek Science, Technology and Innovation (STI) **priorities**?

1.2 Approach and methodology

Our approach to this assignment reflects the theoretical framework for the assessment of operational performance and impact evaluations. Organisational performance evaluation frameworks normally try to explain how internal and external influences affect organisational performance. Impact evaluation tends to use a theory of change – an explanation of how an intervention such as funding research leads to the production of outputs such as knowledge and publications, which in turn trigger outcomes such as innovations or better-informed policies, eventually contributing to impacts in society.

The analytical framework for this assignment was structured around five main topics of investigation which addressed the evaluation questions as shown in Table 1, below.

Our methodological tools consisted in a mix of quantitative and qualitative methods, encompassing desk research, data review (HFRI portfolio and proposal/project data analysis), bibliometric data analysis, a stakeholder survey (successful and non-successful applicants), a site visit, in total 42 stakeholder interviews, and an HFRI self-assessment exercise.



Table 1 Evaluation matrix along the main topics for investigation

Evaluation questions	Strategy	Internal governance, leadership & culture	Organisation & HR	Implementation processes	Impact
1) To what extent has HFRI achieved its objectives?					X
2) To what extent has HFRI achieved operational efficacy (including appropriateness of operational structure, governance, management processes and resources) as an independent research funding organisation?	X		X		
3) To what extent is the setup and operations of HFRI in line with international/good practices?	X	X		X	
4) Are the project selection and assessment processes transparent and effective, and do they result in the selection of the best projects?				X	
5) How is HFRI regarded in the national and international research and innovation community?				X	X
6) To what extent is HFRI financing in line with the broader Greek Science, Technology, and Innovation (STI) priorities?	X				

An experts' panel was nominated for this evaluation. Their short CVs are provided in Appendix A to this report.

1.3 Structure of this report

This report is structured as follows:

- Chapter 1 presents our analytical findings. Each section covers our response to a specific evaluation question
- In Chapter 2 we formulate our conclusions and recommendations

Appendix A to this report presents the bibliography for this evaluation and Appendix B the short CVs of the expert panel members. Appendix C provides examples of research councils' legal statutes and performance contracts in the international practice.

The report has the following annexes as standalone reports:

- Annex I: Synthesis report on the stakeholder consultation (R3), providing a synthesis of the outcomes from the interviews and a reporting on the results of the surveys, as well as the list of interviewees
- Annex II: Brief individual expert reports (R4), building upon the interviews conducted during the site visit and the background brief provided (based on desk research)

In line with the Request for Services, the (anonymised) raw data collected through the survey are provided in excel format.

2 Background to the evaluation

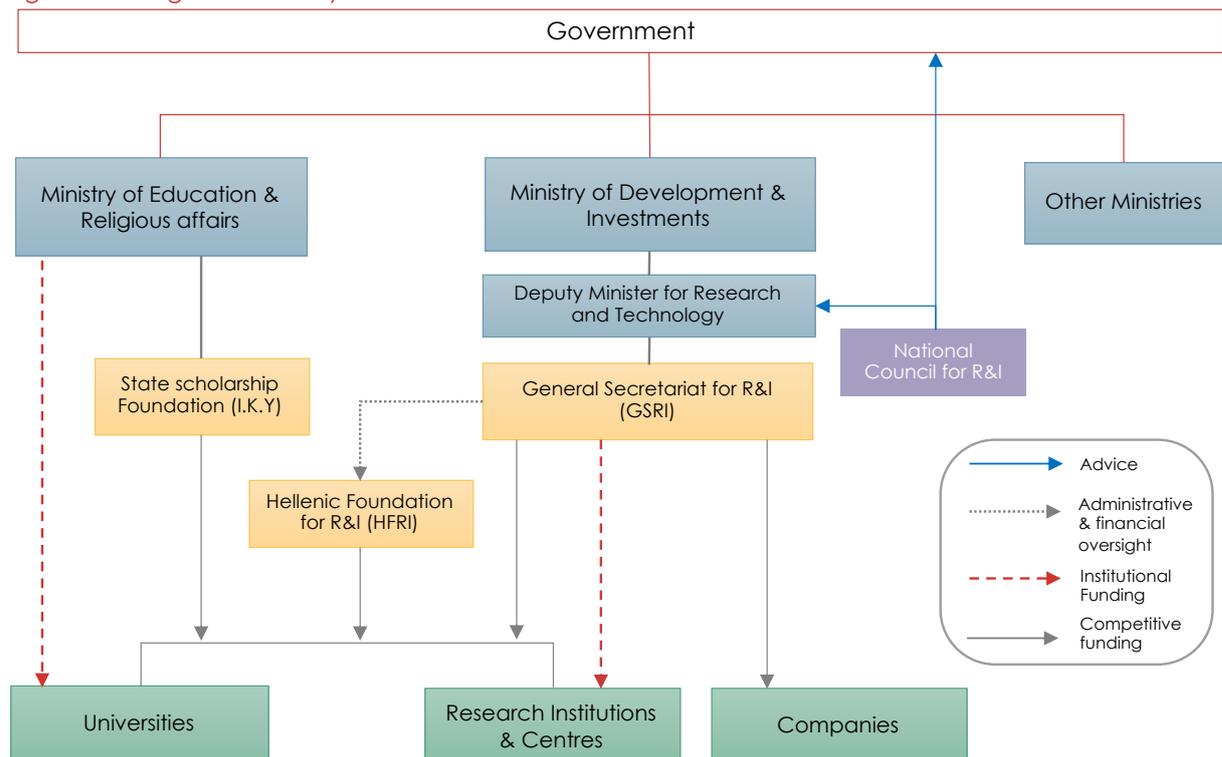
This chapter sets the context to our evaluation of the HFRI. We briefly describe the Greek R&I system (Section 2.1), look into the developments and characteristics of R&D expenditure (Section 2.2) and Greece's human capital for research (Section 2.3), to close off with a brief description of the National R&I policies and its main STI initiatives (Section 2.4).

2.1 The Greek R&I system

Figure 1, below, maps out the **R&I governance system** in Greece. Under the current government, research and innovation is competence of the **deputy-minister for Research and Technology**, within the Ministry of Development & Investments. The **Ministry of Education and Religious Affairs**, formerly in charge of research, keeps on overseeing and providing institutional funding to the universities while the Ministry of Development and Investments provides institutional funding to the research institutions of its competence – in both cases covering permanent staff salaries and other operating costs.

The **National Council for Research and Innovation (NCRI)** is the State advisory body contributing to the formulation and implementation of the national R&I policy. It is composed of 11 members, representing the public research community and industry.

Figure 1 R&I governance system in Greece



At the agency level, the **General Secretariat for R&I (GSRI)** is the main R&I funding body in the country, currently placed under the authority of the Ministry for Development. It is responsible for the design and implementation of the National RTDI strategy and the national plan for the uptake of EU Structural Funds. A major part of the funding it provides through its RTDI programmes and actions relates to the Smart Specialisation Strategy, funded through the EU



Structural Funds. The GSRI acts also as secretariat to the NCRI and oversees the Hellenic Foundation for R&I (HFRI) from an administrative and financial perspective.

The **State Scholarship Foundation (IKY)**, under the authority of the Minister of Education and Religious Affairs, takes charge of the design, promotion, and implementation of scholarship programmes, both in Greece and abroad. In terms of research, IKY invests in research and innovation activities, awarding scholarships for doctoral dissertation and postdoctoral research in Greece. Funding sources are European Structural Funds, specifically the ESF Operational Programme “Human Resources Development, Education and Lifelong Learning 2014- 2020”, and international collaborations with European associations (ACA, DAAD, ESA, EUI, CERN, and HCHN) fostering research mobility.

The **Hellenic Foundation for Research and Innovation (HFRI)** is an independent body, established in 2016, with the legal status of private non-profit organisation, in charge of the response-mode funding of fundamental research, and more specifically to support and assist unrestricted research without any thematic or geographical limitations, having quality and excellence as unique criteria.

The HFRI Activity report 2016-2021 informs that the HFRI is governed by

- The founding Law 4429/2016 (OGG A' 199/21.10.2016) on the “Hellenic Foundation for Research and Innovation and other provisions”, as amended and in force
- The Internal Rules of Procedure: Joint decision No. 195245/2018 (OGG B' 5252) issued by the Ministers of Education, Research and Religious Affairs, as well as Finance and Administrative Reconstruction on the “Internal Rules of Procedure of the Hellenic Foundation for Research and Innovation (H.F.R.I.)”, as amended and in force
- The Ministerial Decisions of article 5 par. 1 of Law 4428/2016 on the allocation of the Foundation’s resources by category of action and by scientific field, upon suggestion from the Scientific Council
- The Agreement as of 15.07.2016 between the Hellenic Republic and the European Investment Bank
- The Technical Bulletin of the project 2016SAE01320007 entitled “Hellenic Foundation for Research and Innovation”, as amended and in force.
- The Decisions of the Scientific Council regarding the Annual Operational Planning of H.F.R.I.’s actions

As for the research-performing sectors, the **Higher Education sector (HE)** is composed of 23 public universities (including the Open University and International Hellenic University. According to the 2020 European Semester Country report¹, the creation of new departments and schools in 2018-2019 when merging technological education institutions into universities added to an **already fragmented higher education landscape**. The 28 private universities of various types accredited by the Ministry of Education, Research and Religion are not active in the field of research.²

The Higher Education institutes are autonomous to a large extent in dealing with academic and managerial issues (e.g. structure), while the Ministry of Education, which is responsible for the institutional framework and the structure of the HEIs' governance, determines operational

¹ EC (2020) 2020 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011 - Country Report Greece 2020, SWD(2020) 507 final/2

² EC (2017) Research and Innovation Observatory report for Greece, 2017

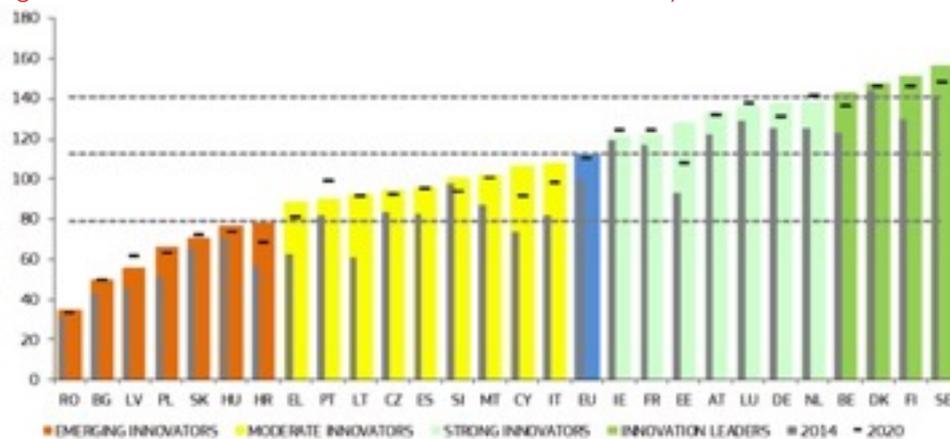
matters such as recruitment, payroll, students' enrolment, etc.³ The Ministry of Education's institutional funding consists in a block funding mainly covering salaries. There is no separate funding stream for research nor is there a performance-based funding system.

The research-performing **Government sector** (GOV) consists mainly of 10 public research centres and 4 technological ones - of varying sizes. They are supervised by the GSRI and the Ministry of Development and receive institutional funding covering their employees' salaries.

According to our interviewees and confirmed by a 2016 National Documentation Centre (EKT) report⁴, interactions and research collaborations between Higher Education institutes and the research centres allowing for human capital mobility and knowledge spillovers, are structured on an *ad hoc* basis, most often based on geographical proximity.

In the last three years, Greece has strongly improved its innovation performance relative to the EU, Nevertheless, the 2021 European Innovation Scoreboard continues categorising Greece as a **'moderate innovator'**.⁵ Greece performs particularly well on innovation in small and medium enterprises and on the linking of these enterprises with others. Greece is also doing well in increasing its share of employment in fast growing innovative sector businesses and in knowledge-intensive activities. However, Greece has a performance below EU average for the number of doctorate graduates and the attractiveness of its research systems (number of foreign doctorate students as well as international co-publications). Also the R&D expenditures in the public sector are below EU average. ⁶

Figure 2 Performance of EU Member States' innovation systems, 2020



Notes: Coloured columns show countries' performance in 2021, using the most recent data for 32 indicators, relative to that of the EU in 2014. The horizontal hyphens show performance in 2020, using the next most recent data, relative to that of the EU in 2014. Grey columns show countries' performance in 2014 relative to that of the EU 2014. Source: European Innovation Scoreboard 2021

³ National Documentation Centre (EKT), OECD Knowledge Triangle Project. Report on Greece May 2016

⁴ National Documentation Centre (EKT), OECD Knowledge Triangle Project. Report on Greece May 2016

⁵ EC (2021) European Innovation Scoreboard 2021

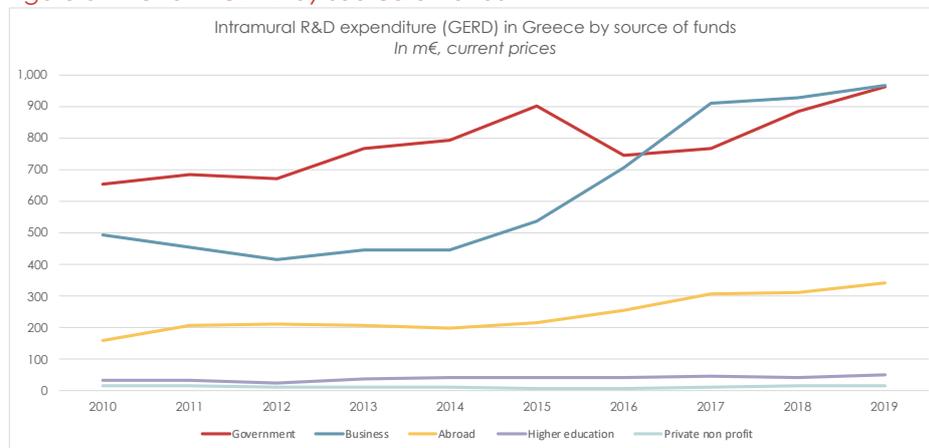
⁶ EC (2020) 2020 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011 - Country Report Greece 2020, SWD(2020) 507 final/2

2.2 R&D expenditure

Public and private spending on research and development as a percentage of GDP has been steadily increasing since 2010 up to reaching 1.27% of GDP in 2019. Greece is therefore approaching the national target set for 2020 of 1.30% of GDP. Nevertheless, according to Eurostat data, the country remains far below the EU27 average (2.23%), ranking 16th among the EU MS.

The increase in research intensity in the last decade is largely due to the growth in business R&D expenditure from 2015 onwards, accompanied by a recovery of the government expenditure in 2018 and 2019 after the drop in 2014/2015 (Figure 3). Funding from abroad, mainly from EU (from the EU Framework Programme and the European Structural Funds), accounted for a stable 15% throughout time and therefore made a significant contribution to the national R&D activities – at a higher level than the EU average.

Figure 3 Trend in GERD by source of funds



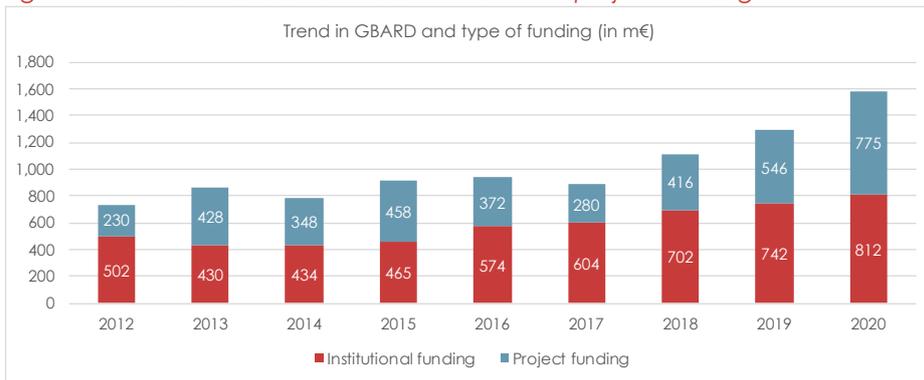
Source: Eurostat, 2021, GERD by sector of performance and source of funds [rd_e_gerdfund]

In 2020, the **government's budget appropriations** for research and development (GBARD) accounted for 1.58% of the total government expenditure, a particularly strong effort considering the EU27 average of 1.4% (only Germany, Denmark and Croatia have higher shares).

In numerical terms, Eurostat data show a gradual **recovery of the level in institutional funding** after the heavy cuts during the financial crisis when, according to the National Documentation Centre (EKT), the Higher Education institutes saw their institutional funding reduced with almost 50%⁷ (Figure 4). Most important, an **increase in competitive project funding** is to be noted in 2019 and especially, 2020, partly to be attributed to HFRI's activities.

⁷ National Documentation Centre (EKT), OECD Knowledge Triangle Project. Report on Greece May 2016

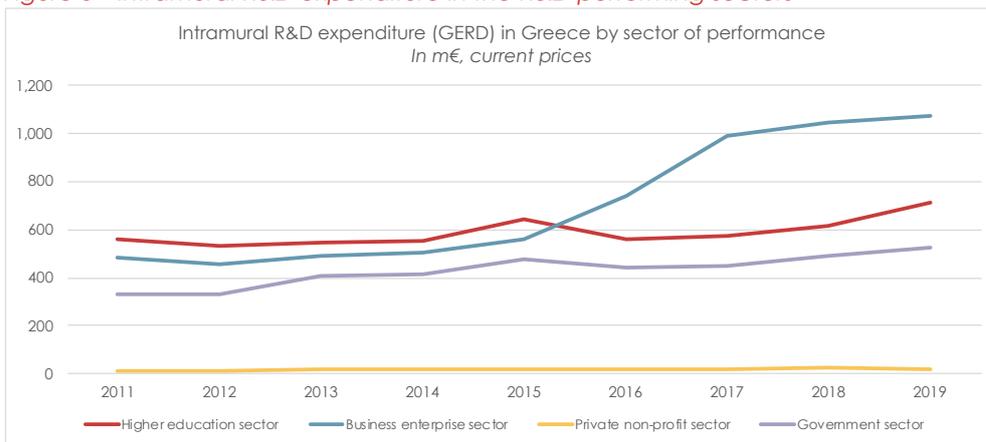
Figure 4 Trend in GBARD and institutional versus project funding



Source: Eurostat, 2021, GBARD by type of funding [gba_fundmod]

In 2016, the business sector took on the role of most important **R&D performing sector** in the country. In 2019 it accounted for 46% of the total intramural R&D expenditure, compared to 35% in 2011. The **Higher Education sector** is the second largest R&D performer accounting for 31% of the total R&D expenditure in 2019, with an increase in absolute value of 16% in 2019 (compared to 2018). The **Government sector** accounted for 22% of total GERD in 2019 and equally saw an increase in its R&D expenditure in absolute value in 2019 (7%).

Figure 5 Intramural R&D expenditure in the R&D performing sectors

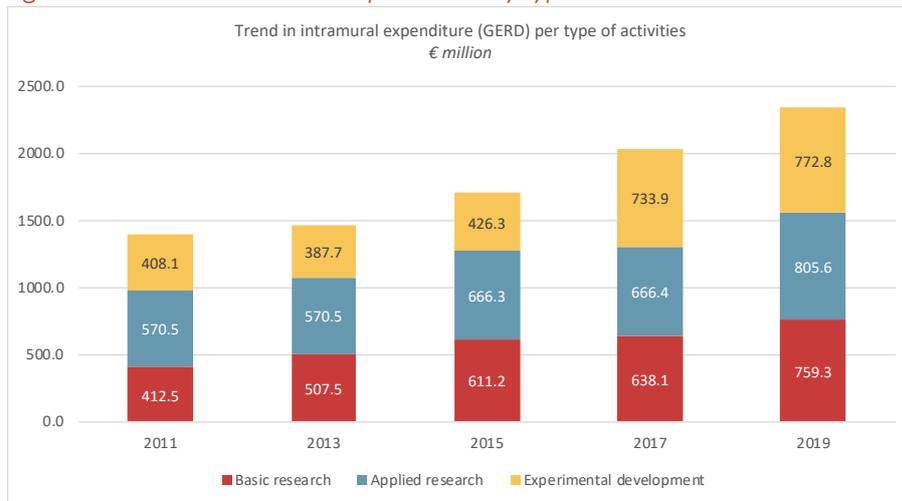


Source: Eurostat, 2021, GERD by sector of performance [rd_e_gerdact]

In terms of **types of research**, in 2019 the three types of R&D accounted for close to equal shares in the total expenditure for R&D in Greece.

Quite obviously, the picture varies among the R&D performing sectors. According to Eurostat data, in the Higher Education sector, basic research accounted for close to 58% of the total expenditure in 2019 and applied research for 35% (compared to 40% in 2015). Experimental development accounted for 7% of the total expenditure.

Figure 6 Trend in intramural expenditure by type of research



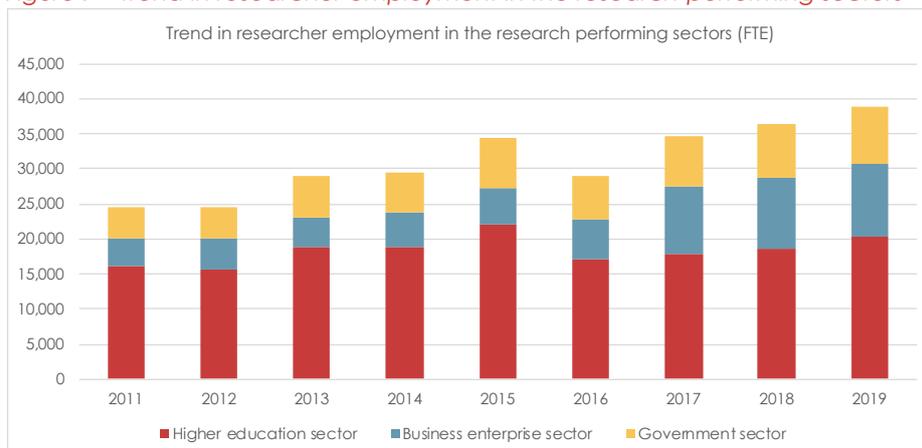
Source: Eurostat, 2021, GERD by sector of performance and type of R&D [rd_e_gerdact]

2.3 Human capital for research

According to Eurostat data, Greece had in 2019 a total of 66,451 employed researchers (head count, HC), accounting for 39,077 full-time equivalent (FTE). Most of the EU27 Member States with a similar size of population, i.e. Austria, Belgium and Portugal, show a considerably higher level of researcher employment (90-100,000 HC, 50-60,000 FTE). The exception is Czechia that had a level of employed researchers like Greece (both HC and FTE).

The Higher Education sector is traditionally the major researcher employer, accounting for 50% of the FTE employed researchers in 2019 (Figure 7). Since 2017, the business sector is taking up the second place, accounting for 25% in 2019 - versus 21% in the Government sector (which includes the research centres (see Section 2.1, above). The increase in researcher employment in the last three years is predominantly due to the business sector which doubled the number of researchers employed (from 5,600 FTE in 2016 to 10,286 in 2019).

Figure 7 Trend in researcher employment in the research-performing sectors



Source: Eurostat, 2021, R&D personnel by sector of performance, professional position and sex [rd_p_persocc]

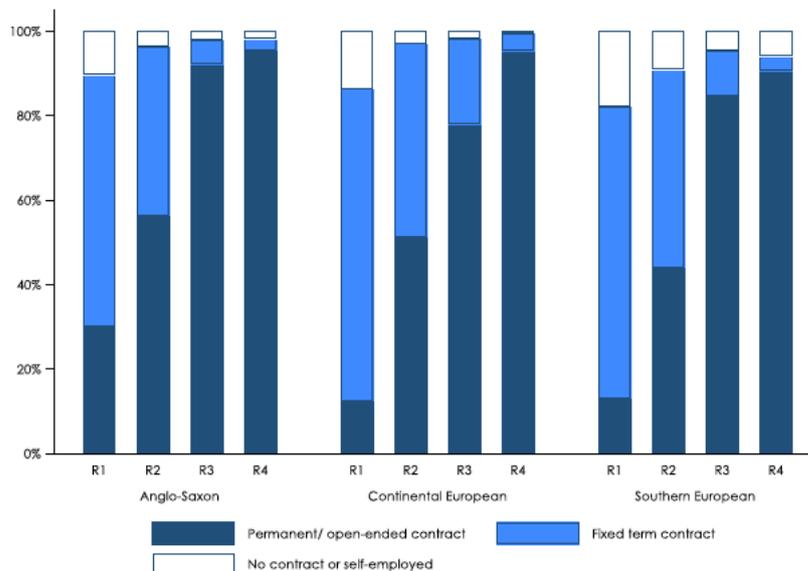


EU comparisons for researcher employment data need to be considered with care, though. As the EC MORE survey and ERA reports showed, researchers in the EU Member States can have different employment statuses, ranging from employed person, self-employed, civil servant or student for PhD researchers - depending on the country, career stage, or employer.

The 2018 ERA Country report for Greece⁸ highlighted that in Greece there are **two distinct labour markets for researchers**. One market includes faculty members and researchers holding permanent or fixed term (mostly tenure-track) jobs in HEIs and public research bodies, respectively, with a specific civil servant status. The other market comprises *self-employed researchers* that have either project-related contracts or fixed-term contracts, mainly for the implementation of research projects or as fellowships. These researchers are not entitled to social security.

While exact data seem not to be available, based upon our interviews, the situation in Greece seems to be reflecting the approach taken in the Southern European group of countries as shown in the 2019 MORE 4 survey report – with about 20% of early career (R1) researchers being self-employed (Figure 8).

Figure 8 Contract status of researchers, 2019



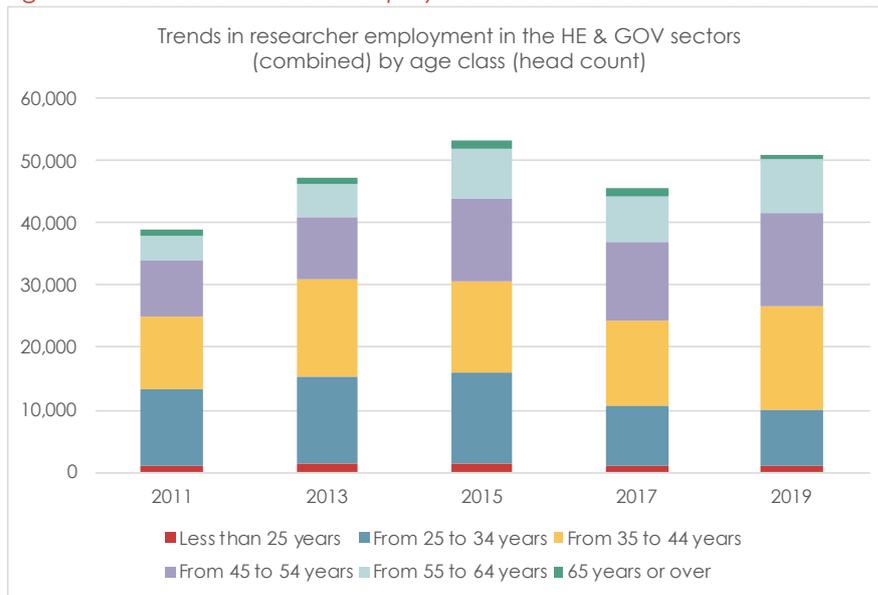
Notes: Average shares of the following country groups are shown: Anglo-Saxon (UK, SE, DK, NL, IE), Continental European (DE, AT, PL, HU, CZ, SK) and Southern European (IT, FR; ES, PT). Source: MORE 4 EU HE Survey (2019)

Using the Eurostat age classes as a proxy for researcher career stages, in the Higher Education and Government sectors combined, the 2019 data show a drop in number of employed early career researchers (age group 25/34 years) by 25% compared to 2011 (9,031 HC in 2019 versus 12,309 in 2011).

The drop was exceptional in 2017, but the downward trend is continuing. Early-career researchers in the 25-34 years age class constituted 18% of the total number researchers in the HE and Government sector in 2019, compared to 21% in 2017 and 32% in 2011.

⁸ EC(2019) ERA progress report 2018, ERA Country report Greece

Figure 9 Trend in researcher employment in the HE and Government sectors by age group



Source: Eurostat, 2021, R&D personnel by sector of performance, age class and sex [rd_p_persage]

While the data on the early-career researchers' employment in the graph above may be flawed because of their self-employment or fixed-term contract status, the data nevertheless confirm that the **brain drain**, i.e. the loss of skilled human capital, has been – and still is - a major challenge for the Greek research and innovation system. The emigration wave during the crisis primarily concerned young people with a high level of education (often in medicine or engineering) and previous work experience. More than two out of three of the post-2010 emigrants were university graduates while 25% of the total outflow concerned people who held postgraduate degrees or were graduates of medical and polytechnic schools.⁹

The brain-drain issue was recognised as a key challenge that needed appropriate measures in the national policymaking. **Reversing brain drain** was an aim of both priority 1 and 3 of the Greek Strategy for the European Research Area – Roadmap 2015-2020 and the European Commission reports considered policy initiatives such as the establishment of the Hellenic Foundation for Research and Innovation and the “Knowledge and Cooperation Bridges” Platform to be steps in the right direction.¹⁰ In January 2020, a wage subsidy scheme called ‘Rebrain Greece’ was launched to try and convince the return of emigrated scientists.

While lack in career prospects no doubt was a major driver for the emigration, data collected on research mobility patterns also show that in 2016, 20% of researchers in Greece moved abroad for a duration of more than 3 months ‘pushed’ by the **lack of funding for research**.¹¹

Gender mainstreaming in research was an issue in Greece in the 2014-2017 period, showing figures below EU average. The 2018 ERA Country report indicated that the research sector in

⁹ Effie Amanatidou & Tonia Damvakeraki & Athina Karvounaraki, 2018. “RIO Country Report 2017: Greece,” JRC Working Papers JRC111358, Joint Research Centre (Seville site).

¹⁰ EC (2020) Research and Innovation analysis in the European Semester 2020 Country Reports

¹¹ MORE4 study, Support data collection and analysis concerning mobility patterns and career paths of researchers, Indicators report, PPMI, IDEA Consult and WIFO, 2019



Greece continues to be characterised by gender imbalances - both horizontal, between different scientific disciplines, and vertical (levels of hierarchy).¹²

In relation to the **transparency and meritocracy in career progression decisions** in the Greek HEIs, according to the EC MORE3 and MORE4 survey data,¹³ 67% of Greek academics gave a positive assessment (both in 2016 and 2019) which was considerably lower than in the EU average of 74%. The situation was worse only in 7 out of the 28 EU Member States.

2.4 National R&I policies and main STI initiatives

The **2014-2020 Partnership Agreement for the Development Framework** (so called National Strategic Reference Framework - NSRF) constitutes the reference document for the programming of the EU funds at national level and the main strategic plan for growth in Greece. It seeks to tackle structural weaknesses in Greece that contributed to the economic crisis, as well as other economic and social problems caused by it. It defines the financing priorities for ESIF (Cohesion funds, ERDF, ESF) throughout 20 programmes, including 13 Regional Operational Programmes and 7 sectoral programmes with a nation-wide scope. The NSRF 2014-2020 defines as first financing priority to enhance business competitiveness and extroversion through the transition to high added value activities and the valorisation of research and innovation activities to strengthen the competitiveness of the economy.

Within the broader framework of the Partnership Agreement 2014-2020, the **National Smart Specialisation Strategy (RIS3)** represents the main R&I policy in the country¹⁴. The RIS3 emphasises on 8 priority sectors that are expected to play a greater role in the economic growth of the country: Agrofood; Life Sciences, Health and Pharmaceuticals; Information & Communication Technologies; Energy; Environment & Sustainable Development; Transport & Logistics; Material – Construction; Culture, Tourism – cultural & creative industries¹⁵.

The adoption of the RIS3 was accompanied by the approval of the Operational Programme (nation-wide sectoral programme) which allocated €1,5b to research and innovation over the period and covered a large part of the actions outlined by the national strategy. More specifically the National RIS3 2014-2020 defined 3 strategic focus areas:

- Investment in the creation and dissemination of New Knowledge
- Investment in Research and Innovation
- Development of innovative mindset, institutions and RTDI links with society

The detailed policy mix set out in the action plan of the National RIS3 intended to contribute to these 3 strategic axes, defining 4 main intervention areas: 1) capacity building, 2) Reinforcement of the RTDI activities, 3) Support to infrastructures, 4) extroversion and networking.

Some of the actions in the policy mix of the National RIS3 were transferred to the HFRI. Specifically, this regards the capacity building research grants for individual researchers, i.e. faculty members, post-doc researchers and the ERC Seal of Excellence scheme.

¹² EC(2019) ERA progress report 2018, ERA Country report Greece

¹³ MORE4 study, Support data collection and analysis concerning mobility patterns and career paths of researchers, Indicators report, PPMI, IDEA Consult and WIFO, 2019

¹⁴ Effie Amanatidou & Tonia Damvakeraki & Athina Karvounaraki, 2018. "RIO Country Report 2017: Greece," JRC Working Papers JRC111358, Joint Research Centre (Seville site).

¹⁵ GSRT, National Research and Innovation Strategy for Smart Specialisation 2014-2020, 2015



3 Analytical findings

In this chapter we provide our responses to the evaluation questions, based upon the evidence collected.

In Section 3.1 we give an overview of HFRI's attainment of its objectives. Section 3.2 focuses on the assessment of HFRI's operational efficacy as an independent research funding organisation. Section 3.3 is dedicated to the assessment of HFRI's organisational set-up and operations, set in the context of the international practice. Our assessment of HFRI's quality of the project selection and assessment processes is provided in Section 3.4. Section 3.5 looks into the image of the HFRI in the national and international R&I community. Section 3.6 concludes with our reflections on the alignment of HFRI financing with the broader Greek Science, Technology and Innovation (STI) priorities.

3.1 Attainment of the objectives

In this section we provide our responses to the evaluation question "To what extent has HFRI achieved its objectives?"

The Hellenic Foundation for Research and Innovation (HFRI) – Greece's research funding agency – was established in 2016 with the **mission** to promote research and innovation, within the framework of the national strategy for research and innovation. Its **strategic objectives** are¹⁶

- To utilise the country's research potential
- To support Greek scientists and prevent the 'brain-drain' phenomenon
- To support and advance national research infrastructure

Operational objectives relate to the organisational set-up of the HFRI, its financing, and its funding distribution.

In the sections below, we first cover HFRI's attainment of the operational objectives (Section 3.1.1). In Section 3.1.2 we report on our findings related to the strategic objectives.

3.1.1 Attainment of the operational objectives

Table 2, below, lists the specific operational objectives that we categorised under the headings 'organisational set-up', 'financing' and 'funding'.

The table provides an overview of HFRI's achievement. Reflecting HFRI's indications in its 2016-2021 Activity Report, it shows that HFRI succeeded in achieving close to all its operational objectives (cells highlighted in green), while the internal infrastructure is close to finalisation (cell in orange). The major exception is the staffing of HFRI, marked in red.

Table 2 Achievement of the HFRI operational objectives

	Operational objective	Achievement
Organisational set-up	Selection and Appointment of Administrative Bodies	Green
	Facility/Registered office of the Institution	Green
	Staffing	Red
	Infrastructure (Integrated Information System)	Orange

¹⁶ HFRI Business Plan 2020



	Operational objective	Achievement
	Institutional framework of operation (Internal Rules of Procedure)	
Financing	EIB Agreement (disbursement EUR 180,000,000)	
	PIP Project	
Funding	Action implementation	

Source: Technopolis Group, 2021; HFRI Activity report 2016-2021

HFRI staffing

The major problem that HFRI has been facing was in its staffing. HFRI currently has a staff of 25, compared to the number of 35 provided for in the Institutional Framework. Table 3 shows that close to all these staff members are employed on a temporary basis. More than half of the staff members (14 out of 25) are active in the research projects department.

In 2017 and 2018 HFRI functioned with a minimal rate of staff (3 and 9 staff members, respectively); from 2019 onwards, the number of staff has fluctuated around 25.

Table 3 Staff employment per type of contract

Type of contract	N of staff provided for*	N of current staff
Regular staff - Open-term employment contract	35	0
Temporary staff - Project lease contract or fixed-term private law employment contract or remunerated mandate		26
Posting from public services or other Legal Person, of Public or Private Law	5	2

Notes: *Based on the Institutional Framework. Source: HFRI Activity report 2016-2021

The low salaries ((unified wage) combined with the working conditions have created a high level of turnover. Over the five years of its functioning (2017-2021), 18 staff members have left the Foundation, 6 of them employed in the Research Projects Department and 3 directors/deputy directors.

The reasons for these significant problems are beyond HFRI's sphere of competence. We cover the topic further in Section 3.2.3, below.

Budget and funding distribution

HFRI's financial resources come on the one hand from the European Investment Bank under the loan agreement (€180m) and on the other hand from the co-funded component of the Public Investment Program (twice €60m). In addition, it has received a donation of €5m from the Stavros Niarchos Foundation. Also counting the capital returns, HFRI has a '**total budget**' of **€305.6m**.

The distribution rates between the different HFRI actions are pre-defined in the EIB loan agreement and Foundation Law (see Table 4. These approximate allocations were agreed with the Ministry of Research in 2016 and were meant to be reviewed and adjusted in the light of the outcome of the first competitions.



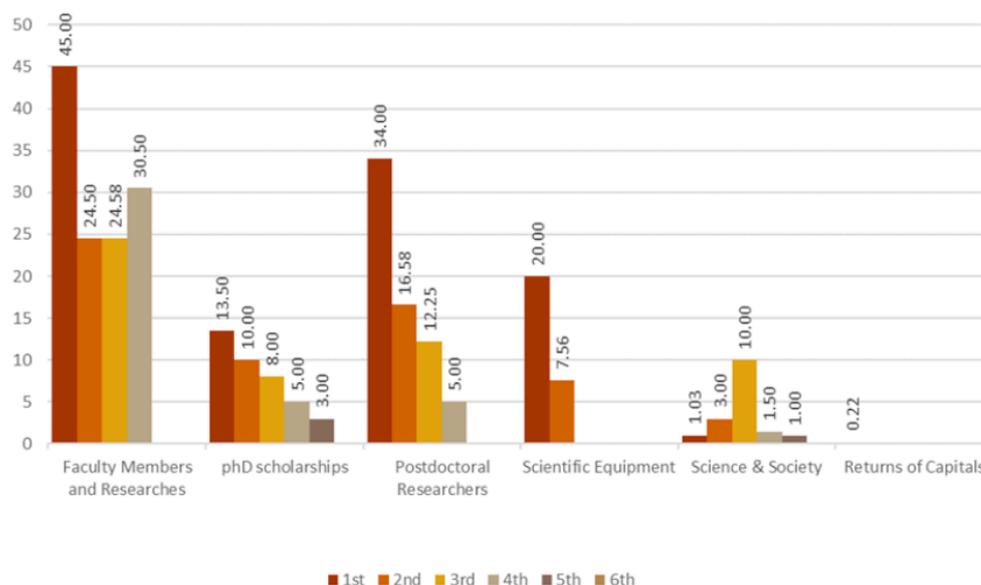
Table 4 pre-defined distribution rates of the funding over the instruments

Actions	Share of the total budget
Basic research projects for faculty members	At least 38%
PhD candidate scholarships	At least 38%
Post-doctorates (Doctorates & Post doctorates)	
High value equipment	Up to 16%
Science & society actions	Up to 8%
Actions co-funded with SNF (ERC seals of excellence)	
Total	100%

Source: HFRI Business Plan 2020

Figure 10 shows the pre-planned allocation of HFRI's total budget over the calls, following the pre-defined distribution rates combined with the decision by the Scientific Council. It shows the effort made by the HFRI to distribute significant shares of the budget available for the different instruments in the first calls – in particular to the benefit of Postdoctoral researchers and Faculty Members.

Figure 10 Pre planned budget allocation in the different calls for HFRI's actions



Source: HFRI Activity report 2016-2021

To date, 15 calls for actions have been published and opened for submission (Table 5). Four of these calls are still in the evaluation phase. As such the calls for actions have on average an **18-month frequency per action**, with as of 2020, annual calls for the doctoral students' scholarships, and bi-annual calls for post-doc and faculty members project grants.



Table 5 Frequency of HFRI's calls

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scholarships for doctoral candidates	OCT	APR			SEP	SEP	SEP		
Research projects to support postdoctoral researchers		JAN	NOV		DEC		DEC		
HFRI research projects to support faculty members and researchers		DEC			JAN		FEB		FEB
Procurement of high value equipment		DEC					MAY		
Science and society / emblematic actions									
200 years since the Greek Revolution				JUL					
COVID					JUN				
ERC Seal of Excellence				OCT		MAR		OCT	
Research infrastructures (ESS 10 th Wave & DARIAH)				JUL		MAY			
Hubs				DEC					

Notes: call highlighted in green have been funded and the evaluation is closed, in yellow evaluation is pending, in red upcoming/expected calls which have not been opened yet. Source: HFRI Activity report 2016-2021

Interviewees and survey respondents indicated the **continuity in funding** as an important added value of HFR - even though it is not yet sufficient according to one in three survey respondents. Funding continuity allows for a strategic planning of the research activities, at a personal and institutional level.

The appreciation of HFRI's regularity in its calls needs to be set against the context of the high dependence on the European Structural and Investment Funds (ESIF) for Greece's national R&D funding (see also Section 2.2, above). This includes the IKY 'scholarships for doctoral students' programme, which is dependent on funding from the European Social Fund (ESF),

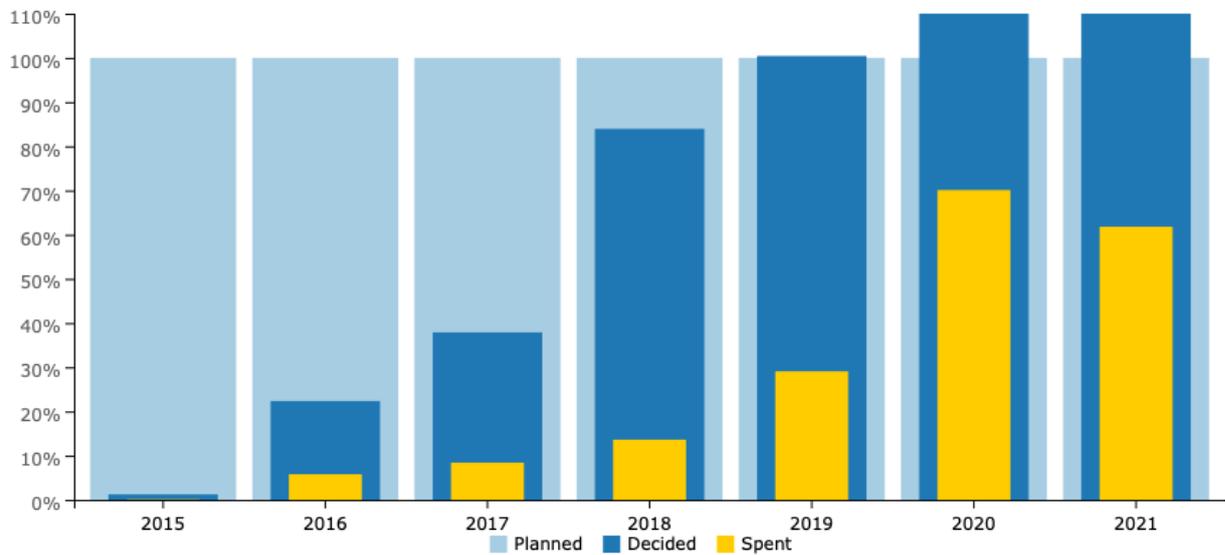
Because of the programme cycle, the implementation of a Structural Funds programme and its actions typically show an interruption of funding calls in the first years of the new programme.

As is shown in Figure 11, below, this was the case in Greece also for the implementation of the 2014-2020 ERDF/ESF funds where only about 20% of the funding was decided upon (i.e. project selected) in 2016, implying a two-year interruption of funding opportunities. Bearing in mind the dependence in the Greek R&I system on ERDF and ESF programmes as only national sources for the conduct of research (research infrastructures and collaborative projects with industry), HFRI has, therefore, ensured a continuity in research funding especially in 2016/2017 – and will do so again in 2021/2022.



Figure 11 Implementation of the 2014-2020 ERDF/ESF Operational Programme

ESIF 2014-2020: Finances: Implemented (Total Cost): Competitiveness, entrepreneurship and innovation - EL - ERDF/ESF



Period Covered: up to 30/06/2021

Refresh Date: 09/12/2021

Notes: "Planned" = total planned investment volume including EU and national financing; "Decided" = total financial resources allocated to decided (selected) projects (project pipeline); "Implemented" = values from fully implemented projects. Source: European Commission, 2021

3.1.2 Attainment of the strategic objectives

To date (September 2021), HFRI has committed (i.e., funding decided for selected projects) a budget of €152.7m, accounting for 50% of its total budget. It involved the participation of more than 1,500 peer reviewers, acting as panel members or independent experts.

Figure 13 shows the distribution of the budget that has been committed so far over the instruments (left hand) and scientific areas (right hand graph).

A primary focus of the HFRI was on ensuring funding resources for the younger generations in the Greek research community, to refrain the **brain drain** of which Greece so harshly suffered during the financial crisis – and which continues to be a challenge (see also Section 2.3, above).

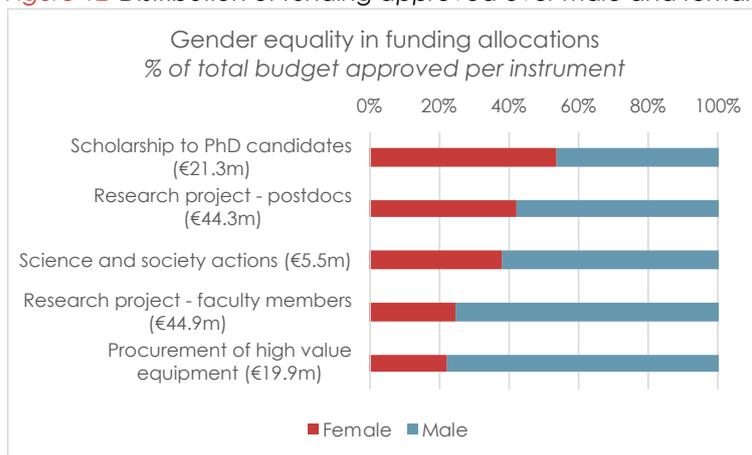
Based upon current data, in the 2016-2019 period, the HFRI funded scholarships to the benefit of 944 PhD students. Such support was particularly needed seeing the disruption in calls for PhD scholarships by the IKY (see Section 3.2.1, above).¹⁷ It also funded investigator-initiated research led by 291 post-doctoral researchers. These early-career researchers in Greece highly depend on project funding for their career development due to their typical fixed-term or self-employment status (see Section 2.3, above). To avoid unfair competition between younger and more senior faculty members, HFRI organised the related calls per 'category of proposal', i.e. for the first two career levels and the two last ones separately.

¹⁷ HFRI PhD scholarships are for €900 tax free for a specific time, with a maximum annual income rate of €15,000 (including the scholarship). The scholarship does not cover social security. A major difference with the scholarships granted by the IKY is the lack in thematic and geographical criteria.



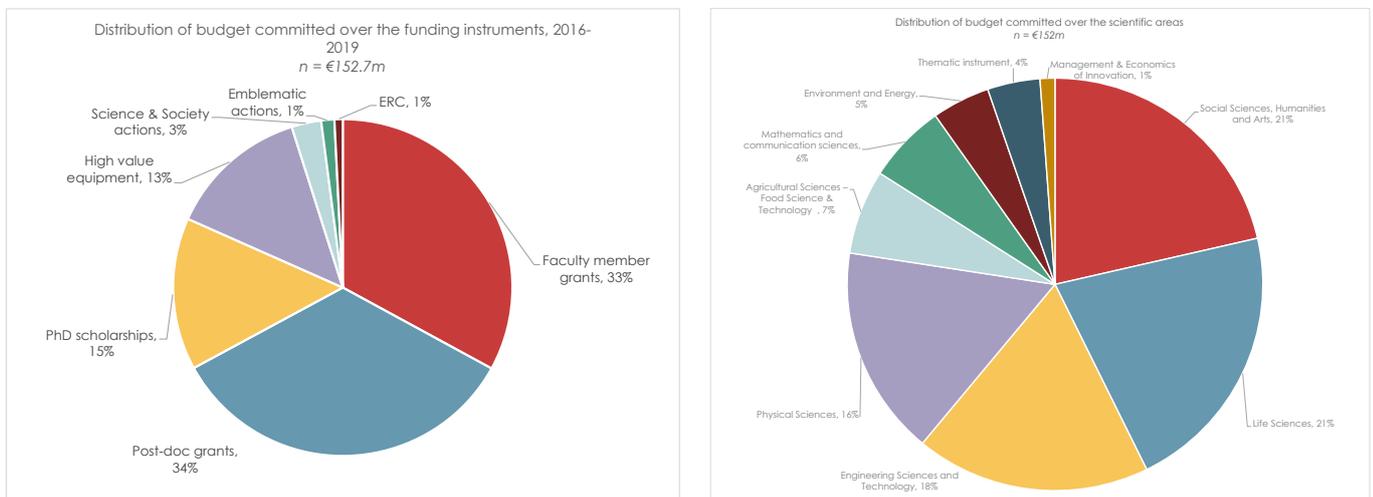
From a gender equality perspective to date overall 35% of the approved funding was to the benefit of female researchers. Significant differences can be noted between the instruments: while slightly more than 50% of the budget for PhD scholarships (1st and 2nd calls) was allocated to female applicants, the same was true for only about 20% of the budget for the Faculty Member and Equipment calls (1st call). These data broadly reflect the male/female distribution in the applications.

Figure 12 Distribution of funding approved over male and female researchers



From a scientific discipline perspective, social sciences, humanities and arts represent about 21,5% of the budget and an overall share of 23% of the proposals submitted.

Figure 13 Distribution of budget committed to the beneficiaries – instruments and scientific areas (2016-2019)



Source: Technopolis Group, based on HFRI monitoring data, September 2021

HFRI also supported and advanced **national research infrastructure**, in collaboration and agreement with the GSRI who has the main competence for this public funding line. Focusing on the needs of the research organisations and research groups within them, HFRI specifically provided support for the procurement of high value equipment, of major importance for the advancement of research in the specific fields. Close to 15% of the budget committed in 2016-2019 was dedicated to this line of funding.



In the context of the Science and Society funding line, three research infrastructures in the field of the social sciences and humanities were funded. It allowed, amongst other, for the participation of Greece in the European Social Survey for the first time in 20 years, which is of critical importance for the (European and Greek) social sciences community and provides critical information for the analysis of social challenges in Greece in general. The digital infrastructures in the field of humanities provide access data, tools, and services to support research based on language resources. and support digitally enabled research and teaching across the Arts and Humanities.

Utilise the research potential

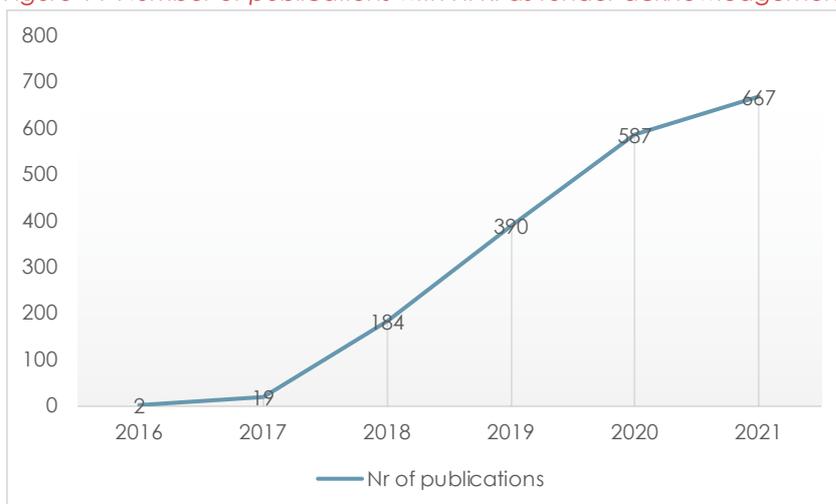
Bibliometric data show that HFRI funding has allowed for a significant sharing of the knowledge gained by the researchers funded. The high quality of the research results in the fields of physical sciences and communication science, most of them published in top ranking journals, suggests a significant contribution of HFRI to the strengthening of research competitiveness in the Greek system.

A key channel for the research community to share the knowledge gained from research is through publications. These can take various forms, ranging from peer reviewed journal articles to conference papers, reviews, book chapters etc, with preferences for the one or the other depending on the fields.

Our bibliometric analysis at the country level showed that in the period 2017-2020, nationally funded research, i.e. by the GSRI or HFRI, allowed for the production of 3,300 publications, one of three of them accredited to HFRI funding. When searching for publications acknowledging specifically HFRI funding, we identified a total of 1,849 publications, 72% of which were articles, 20% conference papers and 7% reviews and less than 50 (1%) are book chapters, letters, notes, etc. (Figure 14).

Out of these 1,848 publications, close to half (846) are open access. Open access provisions are a key indication for a wider societal impact since open access publications provide access to knowledge beyond the research communities.

Figure 14 Number of publications with HFRI as funder acknowledgement (2016-2021)



Source: Scopus, Extraction: Technopolis Group, extraction date 25.10.2021. Please note that the data for the year 2021 is incomplete.



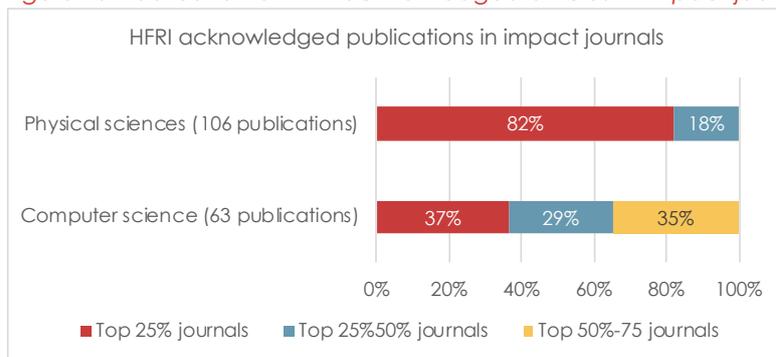
Sub-fields that showed the highest 'productivity' in producing publications based upon HFRI-funded research were computer sciences; engineering; physics and astronomy; chemistry; biochemistry, genetics and molecular biology; and materials sciences.¹⁸

While the above data give a view on the overall 'production' of research publications that the HFRI supported, a measure to understand the **quality of these publications** is to investigate the international prestige of the journals that decided to accept the peer-reviewed articles for publication. Scopus 'ranks' the journals based on the number of citations their articles receive (the so-called JCR Impact Factor).

Journals are classified in quartiles (Q1 – Q4) indicating if a journal belongs to the top 25%, 50%, etc. within the field. The higher ranked is the journal, the stronger is the impact the publications are expected to have on research and scientific development.

We focused our analysis on two fields: computer sciences and physical sciences, by way of illustration (Figure 15). The analysis showed that **HFRI funded high-quality research** in these two fields: 80% of the publications in the physical sciences and about 40% of those in the computer sciences were published in Top25% journals.

Figure 15 Publication of HFRI acknowledged articles in impact journals



Source: Scopus, Data: SJR — SCImago Journal & Country Rank [Portal]. Retrieved 29.10.2021, from <http://www.scimagojr.com>, Compilation: Technopolis Group

3.2 Operational efficacy as an independent research funding organisation

The evaluation question covered in this section is "To what extent has HFRI achieved operational efficacy (including appropriateness of operational structure, governance, management processes and resources) as an independent research funding organisation?"

We first consider HFRI's operational efficiency to then consider HFRI's positioning as an independent research funding organisation (Section 3.2.2). In Section 3.2.3 we assess the adequacy of its human resources while we focus on its financial resources in Section 3.2.4. Section 3.2.5 is dedicated to the adequacy of its monitoring and evaluation system. In Section 3.2.6 we consider the user-friendliness of the services and information it provides.

3.2.1 Operational efficiency

The structure of the Greek R&I governance system shows a clear division of labour between the GSRI, taking up the function of innovation agency funding of applied research and

¹⁸ It should be noted that a comparative analysis of publication production data between fields and sub-fields is inappropriate without field-normalisation. Publication production and citation rates are highly field-dependent.



innovation, and the HFRI which has the function of a research council funding investigator-driven 'basic' research (see Section 2.1, above).

A measure to assess the operational efficiency of research funding bodies is "the volume of appropriations for the agency's operating expenses as a percentage of the research funding provided". According to this international standard, HFRI has reached an **operational efficiency of 5%** in its first two years of full operation (2019 and 2020) (Table 6). The trend over the years is positive and suggests that once all set-up costs will have been covered and delays in funding decisions overcome (allowing for an increase in the amount of funding provided), the operational efficiency can be expected to further increase.¹⁹

Table 6 HFRI operational efficiency

	2017	2018	2019	2020	2019-2020
Operating costs (in €)	26,328	639,125	1,375,529	1,197,700	2,573,229
Funding provided (in €)			23,420,969	25,145,616	48,566,584
Operational expenditure as % of funding provided			5.9%	4.8%	5%

Source: Technopolis Group, based on HFRI accounting data, September 2021

In international practice, an **operational expenditure of 5% is considered acceptable** for agencies functioning as research councils. Table 7 gives a view on the operational efficiency of other research councils in Europe. While all funding agencies listed in the table below are research councils funding curiosity-driven research, like the HFRI, each agency operates differently and has different tasks in the national R&I governance system. Direct comparisons between the figures do not paint the whole picture. The table nevertheless shows that compared to its international peers, even at the current early stage of its operations, HFRI's operating expenses are within the international norm.

Table 7 Percentage of expenses in research funding agencies' total research funding volume

	2018	2019
Danish National Research Foundation (DNRF, Denmark)	3.2%	3.4%
Austrian Science Fund (FWF, Austria)	3.8%	4%
Research Foundation – Flanders (FWO, Belgium)	3.8%	4.2%
National Fund for Scientific Research (FNRS, Belgium)	5.3%	5.6%
Swedish Research Council (VR, Sweden)	5.1%	5.6%
Dutch Research Council (NWO, Netherlands)	6%	6%

Source: Academy of Finland, based on annual reports and information from the organisations listed

¹⁹ The HFRI founding law foresees a maximum of 10% operating expenditure as a contingency (i.e. in case there will be no national/EIB funding after 2020). Current HFRI calculations of the 'contingency' operational efficiency for the whole period of implementation of actions (2016-2029) is at 9% (Source: HFRI (2021) Activity Report 2016-2021).



3.2.2 HFRI's positioning as an 'independent' research funding organisation

Internationally, many research councils regard themselves as **self-governing organisations** of science and the humanities. Their specific legal status varies, depending on the national context. The German Research Foundation (DFG) for example is an association under private law. Its members are German universities, non-university research institutions, scientific associations and the Academies of Sciences and Humanities. The Swiss SNSF is a foundation. Its capital resources consist of the foundation capital, the reserves and the surplus or loss carried forward. The Austrian FWF is an independent institution established under Austrian federal law (Research and Technology Funding Act, or FTFG). However, many research councils are government agencies, The Academy of Finland e.g., is a government agency within the administrative branch of the Finnish Ministry of Education, Science and Culture.

HFRI has been established as a private non-profit organisation under the auspices of the Ministry responsible for research policy.

HFRI has autonomous decision-making power on strategy and processes for the implementation of its funding activities. The Ministry supervises through the General Secretariat for Research and Innovation (GSRI).

There are **significant limits to HFRI's autonomy**. The Foundation Law specifies, "The Foundation is part of the broader public sector" and despite its legal status, HFRI has *de facto* the status of a public administration body, with significant repercussions on its operational functioning.

Any decision on administrative or financial matters requires approval by the deputy minister responsible for research. While this is normally not a problem, provided they are in line with public sector legislation, the additional layer of administration (HFRI-GSRI-Ministry) increases the bureaucratic complexity of the process and especially, causes delays for HFRI in the implementation of its decisions.

HFRI's positioning as a public administration body also implies that it is government deciding on its **organisational chart and institutional framework**, with the capacity to change both the statute and the law. This is uncommon in the international practice (see Section 3.3.1, below).

A recent example is the amendment to the Law introduced by government in March 2021. It established a revised procedure for the nomination of HFRI's director. The National Council for R&I was given responsibility for the establishment of the Election Committee, with the support of HFRI, which would also participate in the decision making.

The length of the foreseen procedure and the unfortunate timing of its introduction (a month before the departure of the previous Director in April 2021), has implied that to date, HFRI has been functioning without a director for the last eight months. This substantial delay in the nomination process of HFRI's new director has placed a considerable (and unsustainable) burden on the Scientific Council's Chair acting as interim director, next to her full-time professorship.²⁰

The amendment also abolished the function of deputy director in the HFRI, resulting in a very flat structure where all responsibilities go directly to the Director. In international practice, most basic research funding organisations have a **dual leadership structure**, consisting of a scientific director or president and an administrative director (as was previously the case in HFRI). The

²⁰ The HFRI legal base states "If for any reason the Director is absent or is prevented from performing his/her duties, following a reasoned decision of the Scientific Council, his/her duties shall be performed by the Chairman of the SC or by one of its members". Source: HFRI (2021) Activity report 2016-2021



current amendment, combined with the profile description of the new Director (scientific excellence is a primary criterion), deprives HFRI from its internal capacity of administrative oversight.

With these recent changes, the Minister appears to be aligning the institutional structure of HFRI with the one of the public research institutions in Greece, and hereby fails to make the distinction between research *performing* and research *funding*. The National Council for R&I also appears to be given more authority over matters related to HFRI than was previously the case,

3.2.3 Adequacy of the human resources

The de facto alignment with the status of a public administration body described in the previous section also implies that HFRI is ruled by the human resources regulations for the public sector. The implications for the staff are a limit to their career prospects (their experience gained is not recognised for a rise in pay scale and nominations), artificially low grades, and low salary levels.

The difficulties HFRI has encountered in hiring and retaining its staff is to be set in this context. As a result, HFRI is **understaffed** and struggles to respond to the workload, as can be seen in the long time-to-grant rates (see Section 3.4.4, below).

Table 8 compares HFRI with other research councils in terms of staff numbers versus proposal workload. While these data cannot take the different characteristics and functions of the research councils into account, they nevertheless illustrate the unsustainability of the situation.

Table 8 Number of applications versus staff in 2019

	HFRI	Academy of Finland	Austrian Science Fund (FWF) (AT)	Swedish Research Council (VR)	Fond de la Recherche Scientifique (FNRS) (BE)
Total number of applications	4932	4451	2489	6000*	3855*
Total number of employees	24	80	119	250	77
N of applications per employee	206	56	21	24	50

Notes: estimation indicated in the reports. Source: Technopolis Group, based on the 2019/20 annual activity reports

3.2.4 Adequacy of the funding resources

Success rates are important measures to monitor and assess the adequacy of the budgets available for funding – at an overall agency and specific programme/instruments level. Success rates are important measures to monitor and assess the adequacy of the budgets available for funding – at an overall agency and specific programme/instruments level. While it is therefore an overall measure for the assessment of the Government's/EIB's financing of the HFRI, it also assesses the adequacy of HFRI decision-making on the distribution of the overall budget over the instruments – in terms of alignment with the needs and interests in the community. As mentioned in Section 3.1.1, above, the distribution of the overall budget over the instruments is pre-defined by law (with some margin of flexibility), based upon SC indications in 2016. The distribution of the budget over the scientific areas is demand-driven per call (depending on the number of proposals submitted).

Generally, success rates are calculated based on the number of proposals funded versus the total number of (eligible) proposals submitted. They give an indication of the attractiveness of



the programme, the need for financial support in the R&I system, and the capacity to submit quality proposals.

In international practice, a balance is typically sought between the need to guarantee the maximum level of quality in the research funded while at the same time avoiding that the success rates fall below an acceptable level, which could cause de-motivation among the researchers to participate in future calls. While the scientific community tends to regard a success rate between 20% and 33% as optimal and a guarantee of fair competition, many research councils operate with lower rates. General success rates below 10%, however, are generally considered unacceptable since they distort the balance between the costs and benefits of proposal writing.

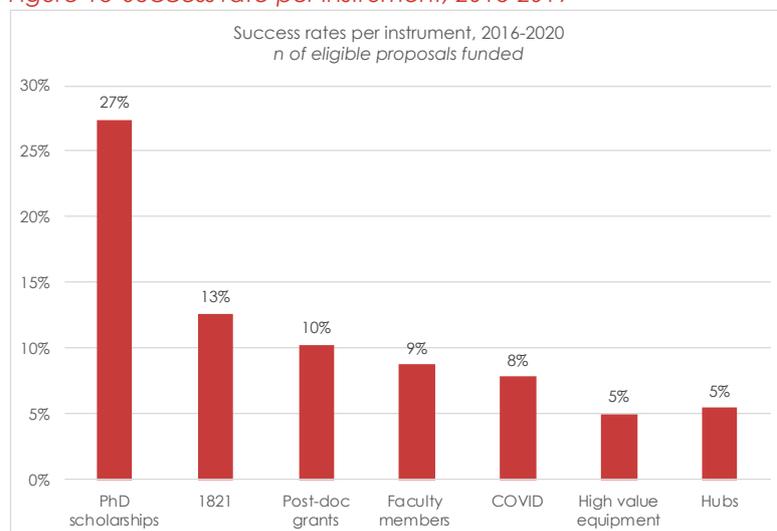
Overall, HFRI applications for funding had a **success rate of 15%** in 2016-2020. This is low.

There were considerable differences between the different instruments, though (Figure 16).

- *Good to excellent* success rates were reached for proposals for PhD scholarships (27%, in both calls) and ERC grants (60%; 5 out of 8 proposals were successful)
- A *low success rate* can be noted for the “1821” Science and Society call (13%)
- *Very low success rates* are to be noted for Postdoc grants proposals (10%, in both calls), the 1st Faculty Members call (9%) and the “Covid” Science and Society call (8%)
- *Exceptionally low success rates* (5%) were reached by proposals for the Procurement of high-value equipment and the Research, Innovation and Dissemination Hubs

Except for the ERC Seal of Excellence grants and the PhD scholarships, all HFRI calls were therefore **underfunded**.

Figure 16 Success rate per instrument, 2016-2019



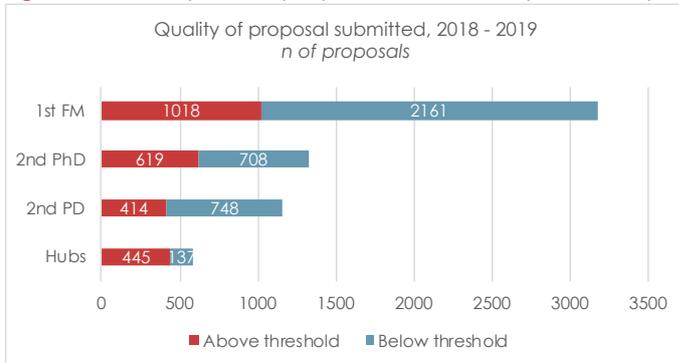
Notes: data cover the 2016-2020 calls with more than 50 proposals and for which the evaluation has been concluded. This includes the PhD 1&2nd call, post-doc grants 1st & 2nd calls, and the FM 1st call. Source: Technopolis Group, based on HFRI monitoring data

Success rate calculations based on the total number of eligible proposals have the disadvantage that they are (also) influenced by the volume of low-quality proposals. In this context, we note, for example, the **particularly high rate of proposals that scored below threshold** in the 1st Faculty Member/equipment call (68%, i.e. 2161 proposals) and in the 2nd



post-doc grants call (64% or 748 proposals). Only a few of the research organisations that we interviewed appear to adopt the good international practice of providing internal support to quality assure the proposals submitted by their institutions,

Figure 17 Quality of the proposals submitted (2018-2019)

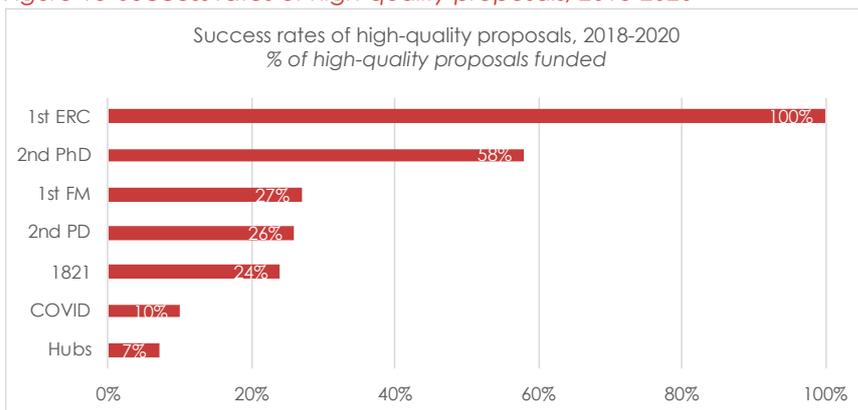


Notes: Data on scores reached are not available for the 1st PhD and 1st PD calls. Source: Technopolis Group, based on HFRI monitoring data

To alleviate the potential bias caused by low-quality proposals, the European Commission also calculates *high-quality proposal success rates* for its Framework Programme (FP).²¹ These success rates relate to the share of proposals scoring above the thresholds that were retained for funding. In the HFRI, the *high-quality proposal success rate* for the calls in 2018 and 2019 was **overall 31%**.²² Also in this case, significant differences can be noted between the instruments (Figure 18).

While the budget was adequate for the ERC grants and acceptable for the PhD scholarships, the calls for post-doc and faculty member grants were underfunded (only one in four high-quality proposals was retained). The adequacy of the funding budget was exceptionally low for the Hubs programme.

Figure 18 Success rates of high-quality proposals, 2018-2020



Source: Technopolis Group, based on HFRI monitoring data, September 2021

²¹ EC (2016) H2020 Monitoring Report 2015

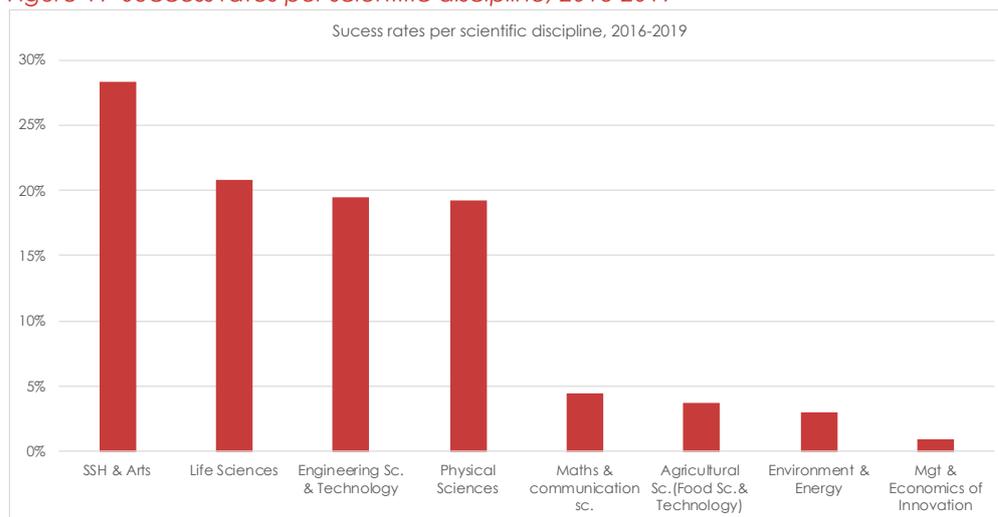
²² Data on thresholds are not available for the 2016 and 2017 calls (1st PhD & 1st PD) that were managed by the GSRI.



In terms of scientific fields, the success rates for applications in 2016-2019 calls (excluding the ones related to the 'thematic instruments') show an underfunding in the fields of mathematics and communication sciences, agricultural sciences (food sciences and technology), environment and energy, and management and economics of innovation (Figure 19).

It should be noted that the HFRI takes a demand-driven approach for the distribution of the budget available per call over the scientific disciplines (i.e. based on the number of proposals submitted).

Figure 19 Success rates per scientific discipline, 2016-2019



Notes: Data for the fields of social sciences and humanities and arts are analysed jointly to be able to take also the 2016 and 2017 calls into account. Source: Technopolis Group, based on HFRI monitoring data, September 2021

The underfunding of HFRI compared to the needs is even more apparent when comparing HFRI's 2019 budget to the budget of other research councils in countries of a similar size in population.

Both in terms of number of researchers in the country and size of the country's population, HFRI's budget was considerably lower than the budgets in other countries.

Table 9 HFRI funding in the international practice

	HFRI (EL)	FWF (AT)	VR (SE)	FNRS (BE)
Total budget (2019)*	€ 74.8m	€ 263m	€ 683m	€ 189m
Researcher FTE (2019)	39,077	52,794	78,629	60,619
Normalised budget/FTE researchers	€ 1,914.2	€ 4,981.6	€ 8,686.4	€ 3,117.8
Population (2019)	10,724,599	8,858,775	10,230,185	11,455,519
Normalised budget/population	€7.0	€29.7	€66.8	€16.5

Notes: Budget decided for the calls in that year. Source: Technopolis Group, 2021, based upon 2019 annual reports



3.2.5 Adequacy of the monitoring and evaluation system

The HFRI is currently in the first stages of its monitoring processes, starting to look at the first intermediate reports from the PIs.

The HFRI monitoring system consists in the traditional procedures of the submission of progress reports followed by a scientific evaluation process and including site visits. The HFRI tries to follow the ERC practices, doing both a financial and physical auditing at mid-term and at the end of the projects. It involves experts in monitoring and in supporting change requests, chosen from the registry and close to the thematic area. While the HFRI aims at digitalising its entire operations, for the time being the monitoring of funded projects and scholarships follows a hybrid system including both physical and digital archives.

As it is currently defined, the **project monitoring and evaluation framework** is good practice. However, some interviewees indicated a certain rigidity in the administrative and financial processes, an opinion that is confirmed by the survey respondents who indicated particularly low satisfaction rates (30%) with the administrative requirements in the application, reporting and payment processes (e.g. supporting documents, compliance processes etc.).

We noted, however, the IT structure is not (yet) geared towards collecting the monitoring experts' feedback on a digital platform and while the HFRI survey to the beneficiaries was a good and useful exercise, it is insufficient from an evaluation perspective.

What seems lacking is an **evaluation framework at the institutional level** that would structure and guide the collection and analysis of monitoring data, going beyond the immediate outputs and outcomes of HFRI's activities (i.e. the effects on the direct individual beneficiaries).

Evaluation is a key instrument, both in ensuring **accountability** and in **fostering learning** and therefore process improvement. It requires the design of an 'intervention logic' (for the specific instruments and the HFRI as an institution), based on the goals and 'mission' of the HFRI. It implies the identification of mid- and longer-term changes HFRI's funding activities are expected to contribute to - in the Greek research system and society as a whole. It allows for the definition of targets against which HFRI can then monitor and assess its proper performance.

Such an institutional evaluation framework would provide HFRI with the needed **'strategic intelligence'** to guide and eventually adjust its funding processes and priorities, and allow HFRI to ensure its accountability, i.e. its reporting on the value of its activities and the relevance of the investment – to national policy makers and society at large.

Such an evaluation framework is crucial in countries where the relationship between Ministries and agencies the context of a ' , by means of **performance contracts** between the responsible Ministries and public research funding agencies following the 'management by objectives' logic - see Section 3.3.1, below.

It would also provide the Greek government with information for its national policy making on research. We noted in general a limited attention and use of 'strategic intelligence' that is available in the Greek R&I governance system, such as, e.g., bibliometrics.

3.2.6 User-friendliness of the services and information provided

HFRI has dedicated significant efforts in ensuring quality communication and service delivery to its targeted beneficiaries, with very good results.

Communication activities included not only the design of the calls information but included also the delivery of helpdesk services, the organisation of workshops and information meetings to promote calls (and the HFRI itself), online communication through the website and social



media (reaching more than 6,000 subscribers on Facebook), and the creation of an online LinkedIn community to develop a dialogue on research matters and activities and to exchange views on research, activities, good practices, reaching more than 15,000 subscribers.

Particularly impressive is the portal through which applicants can register and submit their applications. This portal is online submission and online peer review in one and now has a high number of entries from researchers and experts. It takes many research funding organisations in other countries with far more resources many years to establish such systems.

Interviewees and survey respondents alike expressed their high appreciation for the clarity and understanding of the call information, including the access to relevant background information, the user-friendliness of the online application forms and the digital portal in general, the usefulness of HFRI's helpdesk and the support by HFRI staff during the application process.

However, we noted a pronounced **inward focus of HFRI's communication**, close to exclusively focused on the research community. While this is understandable in this first stage of HFRI's activities, based on international practice one would expect a stronger focus on enhancing public understanding of science.

3.3 HFRI set-up and operations in the international context

In this section we respond to the evaluation question "To what extent is the setup and operations of HFRI in line with international/good practices?"

Throughout this report we have set the practice in the HFRI in the international context, wherever relevant. In this section, we focus on two specific aspects: the governance structure and processes of the HFRI (Section 3.3.1) and the HFRI portfolio of instruments (Section 3.3.2).

3.3.1 Governance of the HFRI

A common element of almost all European basic research funding institutions is the **extensive autonomy** or 'independence' of the organisation from the funding ministry or ministries.

Since the end of the 1990s, governments throughout Europe started implementing the New Public Management (NPM) model for public governance. Decentralisation was a key concept in NPM. It resulted in a system of '**distributed governance**': agencies and other public bodies with specialised functions were granted more management autonomy, accompanied by more stringent performance requirements, and accountability.²³ Based upon the 'management by objectives' logic, a major focus was set on results and performance in terms of efficiency, effectiveness, accountability, and quality of service, NPM implies a **clear separation between policymaking and programming**: that is, of setting broad goals and then deciding in detail how to achieve them. This has in many cases meant that ministries set policies and agencies programmes. Performance agreements connect the two levels.

Across Europe, the use of the NPM model applies to all research-funding agencies in the national system, i.e., both innovation agencies and research councils, and in many cases, includes also the public research performing organisations such as universities and research institutes. Close to all research councils in Europe have their autonomy based on this model.

Concretely, their **legal base** (a Founding Act or Statutes) describes the council's 'mission', in broad terms and reflecting the council's role in the national R&I governance system. It also establishes the council's tasks, broad institutional structure, and core principles of

²³ See also OECD (2002) Distributed Public Governance – Agencies, Authorities and other government bodies.



management, without going into many details.²⁴ Government can amend this legal base whenever the council is expected to take up additional or different tasks, in response to changes in the national research and innovation strategy.

The organisational chart, institutional framework, and operational procedures as well as decisions on programmes or instruments to design and run are a matter of the council, not the ministry. In return for this 'autonomy', councils close off 'performance agreements' with the competent ministry, through **negotiation and dialogue**. These performance agreements are based on the council's programming documents and are increasingly covering **multiple years** (from three to five years of operation). They set out the agreement on financial allocations, performance targets, and indicators by which performance will be judged.

Annual reports serve to inform the competent ministry on progress reached against the objectives. They also allow the ministry to provide feedback and comments on the progress reached. Only in rare cases do the performance agreements or 'contracts' foresee sanctions in the case of non-performance, reflecting the **dialogue-based 'soft' steering** approach that underlays the performance agreements model. At the maximum, non-performance may have repercussions on the council's director.

A main conclusion to draw from international practice in relation to the use of indicators and performance agreements is the use of **distributed strategic intelligence**. Crucially, analytic capacity and the ability to design programmes and other interventions need to be present at several levels in the system. International experience also shows that fundamental for the effectiveness of a policy making process is a **good linkage between the different levels** in the governance structure (i.e., the competent ministries, the National Council, and the agencies).

International comparisons of the approach taken to the **definition of performance targets and indicators** used show the following common features:

- Goals are generally set at two levels in the legal base: broad missions and specific tasks. These tend to be separately reported
- The agencies report and use **indicators against their broad tasks**, not at the specific programme or instrument level
- Where specified indicator systems are used, they contain **small numbers of general indicators** – at most 10-15 – at the level of the whole agency and are standard across the whole range of activities
- There is a clear separation between required quantitative indicators and goals on which the reporting agency can decide what mixture of quantitative and qualitative reporting to employ
- The Anglo-Saxon agencies are in systems that increasingly demand indicators and assessments of impact; the Nordic systems are less demanding and largely content themselves with input and process indicators
- Where there is overall monitoring or evaluation of the health of the whole research and innovation system, it is separate from agency reporting

²⁴ See e.g. the Statutes of the German Research Foundation available (in English) on https://www.dfg.de/en/dfg_profile/statutes/index.html



In Appendix C to this report we provide examples of other research councils' Legal Statutes and Performance Agreements, reflecting international practice.

In Europe and worldwide, the mandate given to **research councils** in their legal base (foundation acts or statutes) can be summarised as the '**promotion of curiosity-driven basic research**', **across all disciplines and fields**, and based on **scientific excellence**. In the case of the National Science Foundation (NSF), founded in 1950, this is worded as "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense...".²⁵ The German Research Foundation (DFG) has as mission "to serve all branches of science and the humanities", its main task is "to select the best projects by researchers at universities and research institutions on a competitive basis and to finance these projects. Individuals or higher education institutions submit proposals in a particular field of curiosity-driven basic research that they themselves select."²⁶ The mission of the Dutch Organisation for Scientific Research NWO is to "advance world-class scientific research", by facilitating "excellent, curiosity-driven disciplinary, interdisciplinary and multidisciplinary research [...] with an emphasis on fundamental research".²⁷

Research councils are typically researcher-governed, and their autonomy includes *at least*:

- The selection of the organisations' "committees" that assess proposals and take funding decisions at the level of individual projects as well as the selection of their chairs is under the control of the scientific community
- The evaluation of applications is carried out by means of an international peer-review process without any interference from a political level

All research councils take the due measures to ensure the **scientific legitimacy** of their funding decisions. In some cases, such as the three Swedish research councils and the Swiss SNSF, bodies external to the council's administration have been established (the secretaries general in Sweden, and the Compliance Commission at the SNSF, which reports to the governing Foundation Council). In most cases, legitimacy is ensured through a clear separation between the council's 'strategy' and funding or 'administration' tasks, and a mix of internally quality-assured and transparent processes. It is clear that – while there is a range of different processes for approving or ratifying funding decisions – these are *de facto* made at the level of the responsible panels and are rarely overturned at higher levels. The competence and integrity of panellists and the processes they use therefore form the basis for funding decisions and their scientific and societal legitimacy (Table 10).

Table 10 Funders' governance

Organisation	Highest strategic decision-maker, answering to the 'owner' (ministry)	Highest academic instance	Who de facto makes funding decisions
Swedish Research Council	Board	3 Discipline Councils + various funding committees	Panels
Academy of Finland	Board	Research Councils*	Research Councils

²⁵ See <https://www.nsf.gov/about/glance.jsp>

²⁶ See https://www.dfg.de/en/dfg_profile/mission/index.html

²⁷ See <https://www.nwo.nl/en/what-does-dutch-research-council-do>



Organisation	Highest strategic decision-maker, answering to the 'owner' (ministry)	Highest academic instance	Who de facto makes funding decisions
Netherlands Organisation for Scientific Research	Executive Board	Domain Boards	Panels
Swiss National Science Foundation	Foundation Council	National Research Council (chair and division heads ratify)	Panels

* Ratifies funding decisions. +Legally, only officers of the agency can take funding decisions, but panel recommendations are rarely ignored. ++ Except for Centres of Excellence funding, which is approved by the Executive Board. Source: Technopolis Group, 2021

The structure of HFRI's governance bodies and their mandates are largely in line with good international practice.

HFRI is a **self-governing organisation**. Its governance framework (General Assembly – Scientific Council – Director) has been designed for the scientific and academic community to participate in shaping the research policy of the country, without thematic or geographical restrictions. In summary:

- In principle, the HFRI is under the control of its member organisations via a General Assembly. This is an unusual arrangement but is used for example by the German research council, DFG. Interviewees indicated the importance of the General Assembly and its mandate to anchor the HFRI in the research community
- The General Assembly ratifies the decisions taken by the Scientific Council (SC) and is also responsible for selecting Scientific Council members. Criteria for selection are the candidates' scientific quality and administrative skill, especially in international research management. The Scientific Council is supposed both to shape HFRI's strategy and to oversee peer and panel review processes. We noted that the HFRI seems to be reducing its use of researchers in the Greek diaspora in the SC. There is a considerable gender equality issue in both governing bodies
- The Advisory Committee is constituted of 11 members, appointed partly by the Ministry (6 members) and partly by the Scientific Council based upon a list proposed by the National Council for R&I. It is independent from the other bodies of the Foundation and has an advisory role. While it may have been important in the past, its mandate and function within the HFRI governance structure is unclear and it appears to have little impact on HFRI now
- At HFRI, as elsewhere, there is a separate director and staff – whose members are typically PhD-level former researchers – taking care of management and administration. Formally, the staff does not take scientific decisions

The HFRI also adheres to international practice by establishing a **clear separation between the Scientific Council and the administration**. The former acts as 'board' responsible for strategy-making, the latter implements these decisions. This international practice is meant to ensure that members of a council's governing body

- Do not act as representatives of a specific discipline or other interest group, but act in a personal capacity in the interest of the scientific community as a whole
- Are not overburdened by the operative work of the funding organisation, allowing for a fair investment of time in the council's activities



The Scientific Council rules, for example, stipulate that council members may not participate in “the judging committees and the objection committees for the evaluation of the proposals and the selection of the final beneficiaries.” Seeing this clear separation of the two functions of the Foundation, the ruling that Scientific Council members, personally as well as their associated PhD students and postdocs, are not eligible for HFRI funding, appears to be overly zealous. We do not know of any research council that applies a conflict of interest at this level.

We note that the lengthy absence of a Director for the HFRI administration (see Section 3.2.2, above) has substantially disrupted the balance in division of labour that these international principles ensure.

Where the set-up of the HFRI does differ from the international practice is in the **limited space it is given for decision making on strategy**.

The HFRI Founding Law and Internal regulation are defined by Government and the highly detailed description of HFRI's function and tasks in the Law *de facto* implies that little to no space is given to the HFRI General Assembly and Scientific Council for strategic decisions and the introduction of change. As a result, the HFRI bodies focus on implementing the tasks described and little has changed over time from a more strategic perspective.

3.3.2 The HFRI portfolio of funding instruments

As in other research councils internationally, the HFRI instrument portfolio includes the **normal repertoire of 'basic research' funding instruments**, i.e. several types of project funding as well as various fellowships, handling bottom-up, PI-initiated research proposals (Table 11). Through the science & society calls, the HFRI aims at disseminating scientific knowledge in society.

Table 11 HFRI portfolio of instruments

Instrument	Objective
Scholarships for PhD Candidates	<ul style="list-style-type: none">• Contribute to prevent the outflow of young scientists abroad• Support PhD Candidates to conduct high-level research in Greece
Research projects for Postdoctoral Researchers	<ul style="list-style-type: none">• Support career development of young researchers, both for PR/PI and the members of the Research team of the project.• Improve the conditions for utilisation of the country's existing research potential• Attract young scientists working abroad
Research projects for Faculty Members and Researchers	<ul style="list-style-type: none">• Improve the conditions for utilisation of the country's existing research potential• Retain young scientists and attract those working abroad
Procurement of high-value research equipment	<ul style="list-style-type: none">• Support and advance national research infrastructure
Science and society actions & emblematic actions	<ul style="list-style-type: none">• Dissemination of scientific knowledge in the wider society• Development of a wider research culture.

HFRI's approach follows the principles that are common to most research councils:

- The mission is to encourage the highest quality research through **competitive funding** and to support investigator-driven research across all disciplines and fields, based on scientific



excellence. The research funded is 'investigator-driven', or 'bottom-up', i.e., the researchers choose their own topic

- In addition to the financial support for research projects in basic research, most funding organisations promote **international scientific cooperation** and pay particular attention to the **promotion of young researchers**
- Most of the funds awarded are **public funds**, although co-financing from private foundations or donations are sometimes added

The HFRI funding streams for the PhD students and post-docs as well as its distinction between CAT I and CAT II researchers (early career and established professors) for the funding of Faculty Member projects is in line with the international trend for research councils adding non-thematic funding instruments, which aim to support and develop the structure of the national research community. The commonest is to provide a **stream of funding for young researchers** that is separate from the mainstream. This prevents the older elite from winning all the money, giving younger researchers a 'space' in which they can develop their careers to the point where they are competitive in the main schemes.

Some research councils also run one or more funding tracks for **career development**, but usually with some specifics (explicit mobility funding for outgoing and incoming researchers, mentoring elements, etc.). With the increasing autonomy of universities, many countries have removed their explicit support for PhD students in favour of support for universities (e.g., Switzerland, Austria and Germany). In the new instruments, universities are supported in expanding their support structures for PhD students (e.g., doctoral schools). One example for the promotion of outstanding education and training for scientific and arts-based doctoral students within the framework of structured doctoral programmes is the Austrian doc.funds programme²⁸

Normally, national research councils have some responsibility for maintaining the health of the national research community that goes **beyond developing researcher careers** to cover issues such as fragmentation in the research community. They therefore need instruments such as centres of excellence, mobility or repatriation schemes and so on that are not relevant at the EC level. **Centre-of-excellence funding** is to build up sustainable research groups with critical mass, across universities and research institutions. These are normally bottom-up and non-thematic – but the fact that individuals cannot apply on their own tends to de-fragment the research community over time. Many research councils also give large grants – enough to fund a small research group, not just an individual – as an incentive for defragmentation. Good examples are the German DFG's Centres of Excellence programme, the Swedish Research Council's Centres of Excellence programme, the Academy of Finland's "Centres of Excellence" programme, and the Research Council of Norway's "Norwegian Centres of Excellence (SFF)"²⁹. Another example is the *Polish Dioscuri programme*³⁰ which is intended to establish Centres of Scientific Excellence in Central and Eastern Europe. It is launched by the National Science Centre together with the Max Planck Society (MPG).

Seeing the **fragmentation of the Greek R&D system** and the unstructured ad-hoc type of research collaborations between the Higher Education institutes and research institutions, we

²⁸ See <https://www.fwf.ac.at/en/research-funding/fwf-programmes/docfunds>

²⁹ See <https://www.oecd.org/sti/Center%20of%20Excellence%20-%20Sweden.pdf>

³⁰ See <https://ncn.gov.pl/en/finansowanie-nauki/konkursy/typy/14>



believe the introduction of a Centre-of-excellence funding scheme by the HFRI would be beneficial for a strengthening of the R&D system and enhancement of critical mass of research.

We recommend a future expansion of the HFRI portfolio to include the above-mentioned additional instruments, **provided that also corresponding budget increases are foreseen**. Initiatives could, for example, address the fragmented research landscape in Greece and fund university-research institution joint projects; another option suggested during our interviews would be to fund high-risk collaborative fundamental research with a disruptive potential and involvement of the private sector as donor specific schemes. (These should nonetheless be under the scientific control of HFRI academic committees.)

We suggest starting with a **centres-of-excellence programme** as a tool for capacity-building and de-fragmentation of the Greek (basic) research system, fostering a culture of research collaboration. The know-how and experience of other research councils in Europe can also be used. Most of these organisations are committed to supporting younger and smaller organisations (many also offer temporary placements for volunteers) and most of them are members of Science Europe.

It should be noted that some research councils additionally run (usually small) thematic programmes to encourage the growth of new fields or to revive old ones that are stagnating. But research councils do not normally run large thematic programmes, for example those corresponding to industrial development needs. That is the business of other kinds of funders such as innovation agencies, with a different kind of governance.

In this context, we note a **fundamental discrepancy** between HFRI's mandate the way it is described in the EIB loan agreement and HFRI's Founding Law and/or the interpretation currently given to it and expectations set.

For the HFRI to keep on functioning as a professional research council, in line with international standards, it is of critical importance that this discrepancy is solved.

In the **Annex to the EIB loan agreement** (Schedule A), the mission and tasks of the HFRI are worded as follows: "*HFRI is to procure and fund research projects, academic positions, the science and society programme, and scientific equipment in support of the national strategy for research and innovation, which in turn is aligned with the national growth strategy. [...] The operations will focus on basic research activities and financing will be directed to four broad categories: grants for basic research, PhD scholarships and post-doctoral fellowships, scientific equipment, science and society promotion programme. The latter will support efforts to popularise science and disseminate scientific knowledge.*"

The 'innovation' dimension of the HFRI is therefore geared towards the interconnection between science and society and the creation of social impact through the diffusion of scientific knowledge in society (i.e., indirect encouragement of innovation). Internationally this is a common function of a research council (as mentioned above),

This mandate of the HFRI council is fully in line with the international practice as well as with the '**division of labour**' that has been established at the R&I governance system level in the country between the two research funding agencies, i.e. the HFRI and the GSRI (see Section 2.1, above). This arrangement reflects common international practice: a two-pillar structure for the design and implementation of public R&I funding policies, with on the one hand a **research council** supporting fundamental research and research capacity building (HFRI), and on the other hand, an **innovation agency** with competence for industry-oriented innovation and applied research (GSRI). Rightfully, at the launch of the HFRI, competence for the support of individual researchers was transferred from the GSRI to the HFRI. Coherence between the two



agencies is reached also through HFRI's complementary attention for the social dimension of innovation and the funding of research in the field of social sciences and humanities & arts, for which little support is provided in the context of the economic development-geared Structural Funds.

The **HFRI Founding Law** includes **no reference whatsoever to HFRI's function as a research council** and therefore, its focus on curiosity-driven, investigator-initiated basic research. Instead, the purpose of the HFRI is worded in general terms as "the promotion of research and innovation in the context of the national strategy for research and innovation". Next to the funding of research programmes, scholarships, and the purchase of equipment, HFRI's tasks include also a task which in the international practice, is typically **competence of an innovation agency**, i.e. to "support, through lump-sum funding, the creation and operation of start-ups to capitalise on research results". In addition, the funding of 'research programmes' is intended to also include coverage of the "costs for the protection of intellectual property rights". Finally, the HFRI 2016-2021 Activity report also mentions the expectation that HFRI would support the promotion of innovation "at a practical level" and financially contribute to entrepreneurship-related activities. Again, this type of expectations is in the international practice, typically set on innovation agencies.

3.4 Quality of the project selection and assessment processes

This section is dedicated to the evaluation question "Are the project selection and assessment processes transparent and effective, and do they result in the selection of the best projects?"

HFRI, like almost all independent research funding organisations, uses a peer-review system to assess applications. Basic research funding differs little in its central processes and evaluation mechanisms in the individual countries in Europe but also worldwide. Key concepts are:

- All **applications are treated equally**, there is no discrimination among disciplines, age, or consideration of the applicant's position or origin. Most organisations make specific effort to avoid conflicts of interest and to ensure that the rules of sound scientific practice and internationally accepted ethical standards are employed.
- To establish and maintain confidence in the system, the core principles of **excellence, transparency, integrity, and impartiality** must be defined and strictly applied. This includes clear rules about how to deal with *conflicts of interests* (both real and perceived ones), which should for transparency reasons be communicated to the stakeholder community

The current approach in the HFRI **reflects international good practice** and uses the ERC as a model. However, it is important for the HFRI that it further refines its processes, adjusting some elements where needed and/or adapting them to the specific context of the Greek research community and its current state of development. A stronger connection and exchange of experience with other research councils in Europe, in particular the smaller research funders, is critical in this context,

In the sections below, we cover the key components of a basic research proposal assessment process and indicate some aspects where we see room for improvement, set against the international practice.

In Section 3.4.1 we cover the two principles that underly a good scientific management of the peer-review process: transparency and fairness. Section 3.4.2 is dedicated to the processes and concepts for the constitution of the evaluation panels. In Section 3.4.3 we assess the quality of the evaluation process itself. In Section 0 we report on our findings and thoughts related to the HFRI time-to-grant.



3.4.1 Transparency and fairness of the peer review process

Transparency of the review process is fundamental for a research council to gain its legitimacy in the eyes of the research community. It entails communication to the research community on the measures taken to ensure the fairness of the evaluation. These typically include; the detailed description of the evaluation criteria in the call documentation; the publication of, the implementation of conflict-of-interest rules; the publication of panel selection procedures, and evaluation guidelines; the publication of the names of the evaluators (before or after the evaluation, depending on the national context); and the drafting of an evaluation report justifying the scores against the different evaluation criteria.

The HFRI shows a **high level of transparency**, implementing all standard measures, including the publication of the names and affiliations of the evaluators and reviewers after conclusion of the evaluation procedure.

An area where, however, we see room for improvement is the **quality of the evaluation reports**. The importance of the evaluation report to cement the legitimacy of the HFRI as a basic research funder is apparent from our interviews and surveys. Interviewees as well as survey respondents indicated the quality of the evaluation reports to be **one of the two main challenges** that the HFRI needs to address.

The quality of evaluation reports is an issue common for many research councils and the HFRI has started remunerating evaluators and external experts in the expectation that this would help addressing the problem. More can be done, though. For example, the HFRI should set more emphasis on the importance of the reporting in its communication to the evaluators (e.g., by increasing the minimum number of words for the comments in the online report template, currently 30).

Transparency measures contribute to the perception of the 'fairness' of the proposal appraisal system. The concept of '**fairness**' relates predominantly to the processes and structures set in place to avoid 'scholarly bias', resulting from the fact that judgement by panel members cannot be independent of their own 'disciplinary culture'. Within a disciplinary culture, certain values, interests, and expectations dominate, as well as research and publication practices, and perspectives on what constitutes high quality research. The most accepted practice to limit scholarly bias is the inclusion of a **wide range of disciplines in the individual review panels** and preferably ensure overlap in competences to promote critical debate.

Another international practice is frequently to replace the reviewers, creating a **rotation system** to reach the appropriate balance between continuity and renewal of panel membership.

The HFRI generally ensures that there is an appropriate turnover among panel members (Table 12). Only in 4 out of the 27 panels was the share of returning panel members higher than 50% (see the cells highlighted).

Table 12 Percentage of returning panel members over the calls

Scientific Area	PhD calls - 3 rd versus 2 nd call	Post-Doc calls - 3 rd versus 2 nd call	FM calls - 2 nd versus 1 st call
SA1 Physical Sciences	76.9%	18%	5%
SA2 Engineering Science and Technology	12%	14%	3%
SA3 Life Sciences (Medicine & health sc)	60%	70%	0%
SA4 Agricultural Sciences	0%	0%	13%



Scientific Area	PhD calls - 3 rd versus 2 nd call	Post-Doc calls - 3 rd versus 2 nd call	FM calls - 2 nd versus 1 st call
SA5 Mathematics and Information Sciences	8%	3%	5%
SA6 Social Sciences	0%	6%	9%
SA7 Humanities and Arts	23%	64%	36%
SA8 Environment and Energy	0%	N/A	4%
SA9 Management and Economics of Innovation	0%	8%	0%

Source: Technopolis Group, based on HFRI monitoring data

Another measure implemented by the HFRI to ensure the fairness of the process is the **right to object** to specific reviewers (applicants can indicate two names in their applications) and the **demand-driven distribution of the call budgets** over the disciplinary areas (i.e., in proportion to the number of proposals allocated to each panel).

The HFRI also gives applicants the **right to appeal** panel decisions ('redress'). As is common among research councils, it applies only for problems in the process, not to scientific decisions. In the calls with two-stage evaluation processes, decisions can be appealed at both stages.

In international context, the volume of appeals submitted by unsuccessful applicants is **surprisingly high**, and even more so, the number of accepted appeals (about one in three appeals) (Table 13). According to our interviewees, however, the appeals most often related to small details. Even in the strongest of cases, they resulted only in a slight increase of the scores, and rarely affected funding decisions. The need for panels to reconsider applications which had successfully been appealed led to significant delays in processing both stages of a two-stage process, substantially delaying HFRI's final funding decisions for the entire call. Our interviewees estimated that a 'redress' process takes about two to three months to conclude.³¹ In a two-stage evaluation procedure, that accounts for four to six months.

We recommend the HFRI to address the causes for these extraordinarily high numbers of appeals. Examples are the quality of the evaluation reports, overly detailed and precisely formulated evaluation criteria (e.g., listing indicators), etc.

Most important, HFRI should improve its communication to the research community on the outcomes of the appeal procedures, showing with the numbers that in most cases, appeals on matters of detail have no effect on funding decisions.

Table 13 Amount of redresses submitted and accepted in two-phase evaluations (2019/2020)

	Submitted Redresses (A phase)	% of unsuccessful applicants	Accepted Redresses (A phase)	% of submitted redresses accepted	Submitted Redresses (B phase)	% of unsuccessful applicants	Accepted Redresses (B phase)	% of submitted redresses
1st FM	450	21%	132	29%	173	25%	62	36%
2nd FM	275	19%	88	32%	73	20%	33	45%

³¹ The estimate in the HFRI Activity Report 2016-2021 is in total 64 days or 3 working day months

	Submitted Redresses (A phase)	% of unsuccessful applicants	Accepted Redresses (A phase)	% of submitted redresses accepted	Submitted Redresses (B phase)	% of unsuccessful applicants	Accepted Redresses (B phase)	% of submitted redresses
2nd PD	121	16%	47	39%	52	17%	19	37%

Source: Technopolis Group, based on HFRI monitoring data

Another topic is the **consistency of the assessments** - in the different panels, by the different panel members, and over time. A common understanding of the assessment criteria, standards and the application of the quality scores is typically achieved through a 'calibration' meeting at an early stage in the assessment. In addition, the panels should be guided by **clear and universal guidelines**. Most research councils make the guidelines for the peer review process public, as does the HFRI. However, we noted that through the years, the HFRI made changes to the evaluation criteria and weights to the scores for some of the instruments. These changes are to be considered part of HFRI's learning process and testify positively that HFRI has the flexibility needed to learn from experience.

It would now be beneficial for HFRI to publish a process description and criteria definition that is more **stable over time**, building upon HFRI's own as well as international experience.

Finally, a note on the **PI assessment criteria**. We recommend

- To avoid relying on indicators such as number of PhDs and volume of international funding. Performance against these indicators is field-specific and/or institution-dependent and the use of these indicators therefore creates fairness issues
- To limit the use of bibliometrics for the assessment of the quality of the PI (especially problematic is the use of the h-index) and adopt the principles of the Leiden Manifesto for Research Metrics,³² issued by world-leading bibliometric professionals

3.4.2 Composition of the evaluation panels

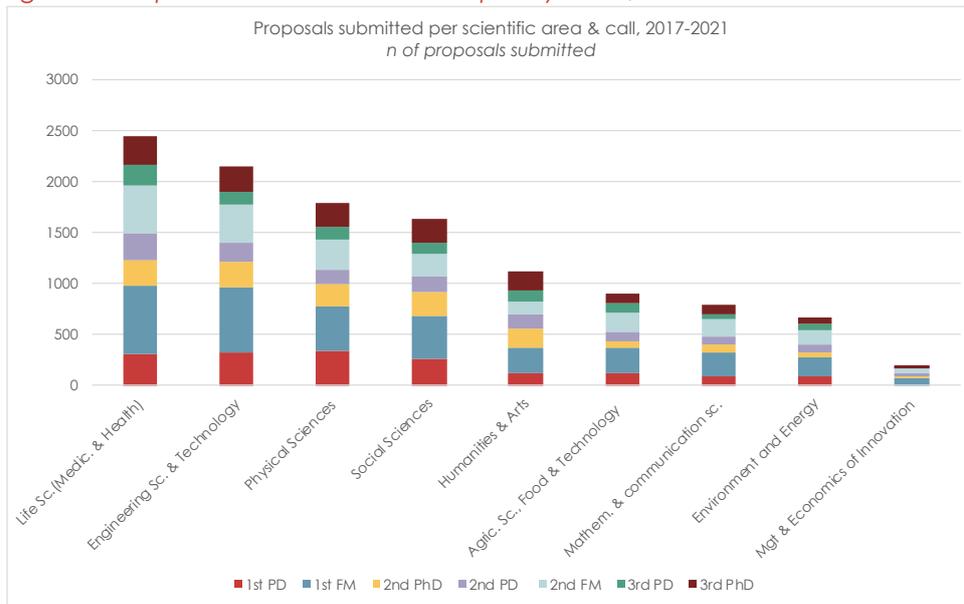
Peer review-based evaluation systems typically set up a hierarchical system of **panels and sub-panels**. The number of panels and the existence of sub-panels depends on the size of the R&D system as well as the depth and complexity of the exercise, quite obviously also influencing its costs. The greater the number of panels and sub-panels, the higher the costs.

The current scientific panel system is based upon the 2015 OECD Frascati Fields of Research and Development (FORD) classification, with modifications: the 'original' six disciplinary areas are turned into nine areas that constitute the focus of the evaluation panels. Nine panels seem many, seeing the relatively small size of the country and the limited budget available.

In addition, the proposal volume that these 9 panels handled in the 2017-2021 calls was substantially different (Figure 20). It ranged from more than 2000 proposals in the Life sciences (Medicine & health sciences) and Engineering sciences and technology to about 600 in the Environment and energy field. Some panels used four to five sub-panels, others none.

³² <https://www.nature.com/articles/520429a>

Figure 20 Proposals submitted in the disciplinary areas, 2017-2021



Source: Technopolis Group, based on HFRI monitoring data

We suggest **reconsidering the current categorisation** of the disciplines, spreading the assessment work more equally over the panels and reducing their number. The new categorisation could build upon the 'original' FORD classification to ensure alignment with categorisations used internationally. The introduction of a Natural sciences panel, e.g., including the physical and life sciences, seems an appropriate change.

There are widely shared commonalities in peer review assessments across the globe in terms of the **profile of evaluators and reviewers**. Following international practice, some core principles related to the evaluation panels, evaluators and reviewers are:

- The peer review process typically involves **external³³ (usually remote) reviewers** (2-5 external reviewers per proposal with thematic expertise closely matching the substance of the application) and a **review committee or panel**
- Especially in smaller countries, **international review** is seen as helpful in ensuring legitimate processes leading to high-quality science being funded. Recruiting reviewers from the international arena is firstly understood to help avoid conflicts of interest, and secondly to benchmark national research against international standards. The use of international peers and panels should be done with a sense of proportion. Nevertheless, especially in smaller countries, it is important that only in the rarest of cases, the reviewers come from their own country. Hence it is also necessary that applications are written in English

In HFRI, the involvement of international reviewers/experts is **very limited**, even though some increase is noted in the 2nd FM call (Table 14).

³³ The term "external" needs to be understood as **external to the council's 'board'** (e.g. the Scientific Council), reflecting the international practice of separating the functions of 'board' and 'administration'. The ERC, e.g., specifies the profile of its evaluators as "An independent external expert is an expert who is *external to the ERC and the Commission* and is working impartially in a personal capacity and without conflict of interest" (EC (2021) ERC Rules of submission and evaluation under Horizon Europe, European Research Council Executive Agency)



Interviewees highlighted the considerable difficulties that the HFRI encountered in involving international reviewers because of legal/fiscal constraints (obligatory asset declarations). These constraints were overcome in 2021, for HFRI and GSRI evaluators and experts. By law, the HFRI is obliged to select panel members and remote reviewers from its Register of Certified Evaluators/Experts (or the register developed by the GSRI). However, the Scientific Council is allowed to nominate foreign experts as panel members even if they are not included in the Registers, provided no expert with the needed expertise is listed in the register or available.

Table 14 Involvement of international panel members or independent experts (2018-2020)

	Foreign Panel members or/and with foreign affiliation	% of total number panel members	Foreign Independent Experts or/and with foreign affiliation	% of total number independent experts
2nd Call PhD	4	3%	0	0%
2nd Call Post-doc	7	6%	28	24%
1st Call FM, Phase A	51 in Phase A, 35 in Phase B	25%	166	39%
2nd Call FM	33	22%	148	48%

Source: Technopolis Group, based on HFRI monitoring data

The composition of different panels as well as their appropriate staffing is one of the biggest challenges in the design of a peer review-based research assessment approach. Panel peer review reaches a common judgement through what Olbrecht and Bornmann (2010)³⁴ described as “mutual social exchange”, where the final judgement is based on the common judgement of all evaluators. Often, tacit negotiations and compromises affect the decision and few panel members dominate the field. In a critical study of the evaluation of research grant applications, the Swedish Research Council argues that panel evaluation is not gender neutral.³⁵

Beyond the inclusion of international experts, many international funders also strive for an appropriate **balance of gender and age** in the peer review panels and the panel chairs should have leadership qualifications and management abilities. International experience shows that a better balance in the panels from an age perspective had very positive effects on the diligence of the panels and their commitment to the evaluation process timewise. In the HFRI, the proportion of women among both experts and panel members is extremely low according to all international standards (among panel members it is currently 21% and among experts 22%).

The proportion of women among both experts and panel members should urgently be increased and we suggest the HFRI to consider ensuring an appropriate balance in age.

³⁴ See Olbrecht, M., Bornmann, L. (2010). Panel peer review of grant applications: What do we know from research in social psychology on judgement and decision making in groups? *Research Evaluation* 19, 293–304.

³⁵ See Ahlqvist, V., Andersson, J., Söderqvist, L. (2017). A gender neutral process? Gender Equality observations in the Swedish Research Council's Panels 2016, Swedish Research Council https://www.vr.se/download/18.f1bedda162d16aa53a2440f/1555334963573/A-Gender-Neutral-Process-Panels-2016_VR_2017.pdf



3.4.3 Quality of the evaluation process

Almost all basic research funding agencies evaluate incoming applications according to the similar processes and principles, and all apply **international peer-review procedures**. A typical process looks like this:

- Panel definitions are decided, and panellists are recruited
- Researchers send their research plans and applications to the agency (mostly via an application portal).
- Science advisors or programme managers (internal staff) processes the application and check for completeness and any formal errors, the applicant receives an acknowledgement of receipt. Most agencies apply rules that funding applications which are outside the scope of the agency's funding activities or which involve applicants who obviously do not possess the professional qualifications or research experience necessary to carry out the project are returned without the initiation of a review procedure.
- International experts or reviewer (mostly two as a minimum) are selected, in some cases applicants have the right to exclude a limited number of researchers or research groups from the review process. Some agencies do not use national reviewers at all (e.g. Austria), others only in rare cases when no suitable international reviewers can be found (e.g. Switzerland, Germany or Finland). Various procedures are used for the reporting:
 - Some agencies work exclusively with written reviews from abroad
 - Some agencies use international panels of experts
 - Most agencies use written reviews only for "standard projects" such as "stand-alone projects" and more complex processes with international panels for projects of more complex programmes such as coordinated programmes, "Centres of Excellence" and similar programmes. Normally, the more complex procedure is used for bigger-than-usual grants
- Panels review the assessment reports of the peer reviewers and rank proposals, using a combination of the peer review reports and their own knowledge. They produce a list of proposals, which they believe should be funded
- The officials of one or more high-level elected bodies or boards review the panels' lists and approve them. It is very unusual for a high-level board to overturn a panel decision
- Political decision-makers do not participate in the review process or decision-making.

This is a long-established one-stage process that most basic research funding organisations apply, and it accounts for most individual project award decisions.

The **processes implemented in the HFRI** are very closely aligned with the ERC.

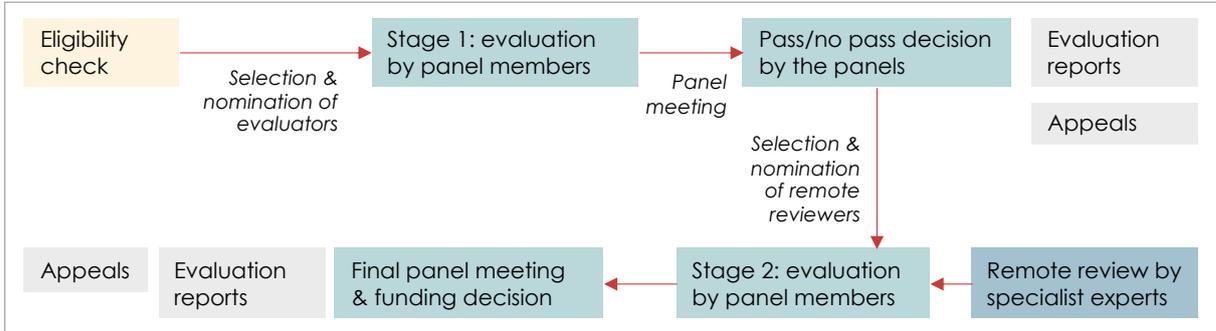
The HFRI has, e.g., taken over from the ERC the "authority of the panel", giving funding decision-making power to the panels rather than the HFRI Scientific Council. Equally similar is the role of the scientists involved:

- Panel members have specialist as well as generalist competence. They participate in panel meetings and perform individual evaluations of proposals. They act as generalists in the 1st stage of two-stage evaluations,
- Remote reviewers bring in specialised expertise within a research field and evaluate only remotely. In two-stage evaluations their involvement is normally limited to stage 2

Finally, the ERC and the HFRI adopt the same procedures for the two-stage evaluations (when considering similar instruments) (Figure 21). HFRI applied this two-stage evaluation process for

the Research projects to support Postdoctoral researchers (1st & 2nd calls) and the Research projects to support Faculty Members & Researchers and procure high-value equipment.

Figure 21 Two-stage evaluation procedure in the HFRI and ERC

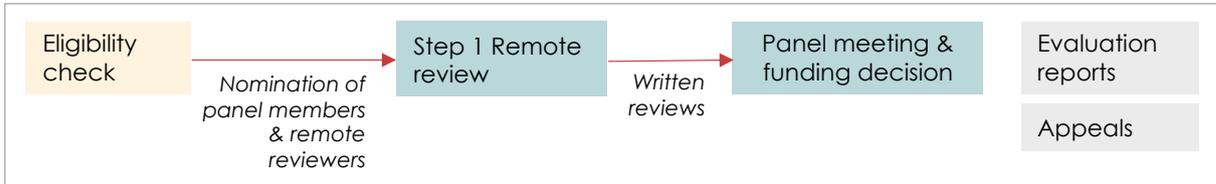


Source: Technopolis Group. Based upon: HFRI (2021) Proposal evaluation and redress procedures; EC (2021) ERC Rules of submission and evaluation under Horizon Europe, European Research Council Executive Agency; EC (2021) European Research Council (ERC) Frontier Research Grants, Guide for Peer Reviewers Starting and Consolidator Grant Calls

The reference to and adoption of approaches and principles used in the ERC is good practice in many respects, as the ERC was built with a lot of scientific know-how from all over Europe. However, the size of the ERC, its financial resources, and the scope of its work (covering the whole of Europe) implies that what works for the ERC may not always be the ideal solution for national research councils, especially smaller ones as the HFRI.

The one-stage evaluation process described above – and mapped out in Figure 22, below, is a **valid alternative to the two-stage process** that the HFRI currently applies.

Figure 22 Alternative two-step evaluation process



Source: Technopolis Group, 2021

Most important, this one-stage process implies a **clearer division of labour** between remote reviewers and panel members and definition of their roles:

- Remote reviewers take care of the assessment of the scientific quality. They should be from abroad, should be very close to the research in question, and experts for the specific proposal
- The panel members, the majority from abroad, have a broader field of expertise and assess the proposal in its entirety and set in context. They must base their judgement on the opinion of the remote reviewers. They carry the responsibility for the evaluation report, building upon the score justifications provided by the remote reviewers

We recommend the HFRI to adopt such a **one-stage procedure for all its instruments**. It would simplify an (in our opinion) over-complex evaluation procedure for the current types of



instruments that the HFRI funds. It would also reduce the particularly lengthy evaluation process, addressing the major criticism of HFRI, i.e., its time-to-grant (see Section 3.4.4, below).

As for the 'division of labour', a **dual system** could be envisaged whereby for the PhD scholarship and Science and Society calls, the panel members keep on being the main evaluators (asking for peer support only where the panel feels it lacks expertise), while for PostDoc and Faculty Member grants, the division of labour described above is adopted.

Potential disadvantages relate to the number of international remote reviewers to hire and closely related to this, the costs of the exercise.

As for the hiring of the remote reviewers, one of HFRI's major accomplishments is the development of the **Register of Certified Evaluators/Experts** with the 1000 names it currently contains, including foreigners. Combined with the GSRI register and eventual other online sources such as the "Knowledge and Cooperation Bridges" Platform that constitutes a link to the Greek diaspora, it should facilitate the process. We would also advise to investigate with the EC whether access can be provided to the ERC experts' database, as other agencies have done.

A more important role can be given to the HFRI administration in the identification and pre-selection of remote reviewers and panel members. In international practice, there is generally a high level of trust in administrators' capacity to identify reviewers and panellists. The **research council staff** typically takes on most of the work involved, **under the authority of the scientific committee structure**. The staff's research experience and scientific background makes it highly capable of identifying potential panel members and peer reviewers. In addition to its scientific understanding, the staff also has 'institutional experience' of research funder administration. Based upon the feedback from our interviewees who all regarded the HFRI staff as highly competent, we believe the HFRI staff has the needed competences to take up this task.

A final note regards the **remuneration of the panel members and remote reviewers**. In international practice, close to no national research council remunerates panel members or reviewers. (An exception to the rule is the Norwegian Research Council.) The ERC is another exception, but it does adopt a double system: panel members are remunerated, "considering the significant commitment of time that is requested". Remote reviewers are not.³⁶

We recommend the HFRI to assign a more important role for the selection of the panel members and external experts to the administration staff, under the authority of the Scientific Council. We also suggest revising the reviewers' remuneration policy in order to keep the review process costs within sustainable limits.

3.4.4 Adequacy of the time-to-grant

Interviewees and survey respondents alike indicated the time-to-grant as a **major challenge** that the HFRI needs to address. Not only does it pose a risk to HFRI's professional image, but it also creates funding continuity issues and hinders the beneficiaries' research planning.

Table 15 gives an overview of the time-to-grant for the calls in 2018 and 2019. We cannot but note the **particularly long planned time-to-grants** and the fact that only for one call (the 2nd PhD candidate call), the average time-to-grant was as planned.

³⁶ EC (2021) ERC Rules of submission and evaluation under Horizon Europe, European Research Council Executive Agency



Table 15 Overview of the time to grant per call (2018-2019)

Call	Call deadline	Proposals submitted (n)	Time to grant planned (mth)	Average time to grant (mth)	Time to grant in the panels (min - max)
1821	10.07.2018	79	15	17,3	17 - 17
2nd PhD	20.07.2018	1327	14	14,5	14 - 16
1st FM	14.02.2019	3179	24	24,8	22 - 41
2nd PD	6.03.2019	1162	17	21,7	20 - 30
10th Wave	10.07.2019	1	3	3,9	n.a.
1st ERC	14.10.2019	8	9	12,7	13 - 13
HUBS	23.12.2019	582	16	20,8	21 - 21

Source: Technopolis Group, based on HFRI monitoring data

In its 2016-2021 Activity Report, the HFRI indicates as reasons for the long time-to-grant and the delays

- The large number of proposals submitted – which is directly related to the understaffing of the HFRI
- The difficulty of finding evaluators (reasons indicated are issues of conflict of interest and the obligation for declaring assets)
- The submission of proposals in two phases

The HFRI also provides an indicative timeframe for the different steps in a two-stage evaluation procedure such as, for example, in the case of the 1st FM call. We mapped it out in Figure 23. It shows the considerable time needed for the recruitment of evaluators and reviewers and for the appeal process and related re-evaluation (in both cases, 6 months).

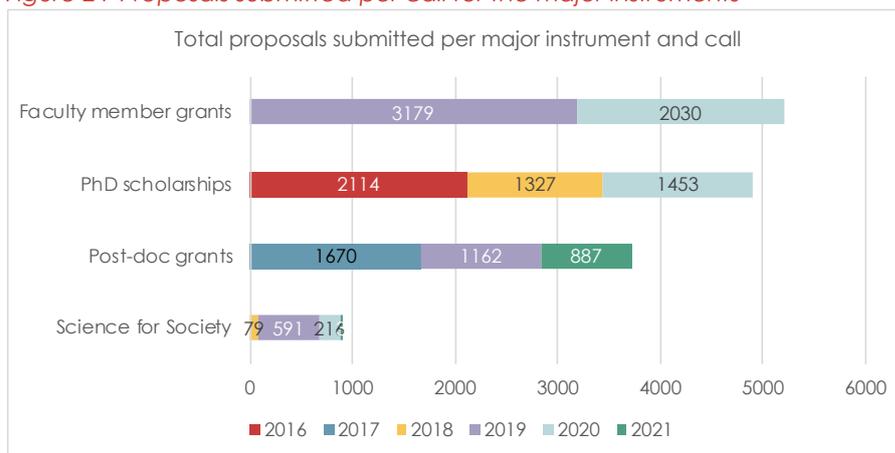
Figure 23 Indicative timeline for the major milestones in a two-stage evaluation process



Source: Technopolis Group, based on the HFRI 2021-2026 Activity Report

The HFRI has made substantial efforts to alleviate some of these problems, including the optimisation of the evaluation procedures, the further development of the Register of Evaluators-Experts, the agreement with the Government that asset declarations are no longer required, and the remuneration of the evaluators and experts (€70 per proposal) which should facilitate recruitment. Ultimately, it also expects a gradual reduction of the number of proposals submitted thanks to the continuity in the calls. Experience seems to give some ground for this expectation, at least for the faculty member and postdoc calls (Figure 24).

Figure 24 Proposals submitted per call for the major instruments



Source: Technopolis Group, based on HFRI monitoring data

We recommend the HFRI to take the following additional measures to address the time-to-grant problem:

- As mentioned above, to adopt a **one-stage assessment process**
- To launch the search for available panel members/reviewers **prior to the call deadlines**, to be nominated once the review needs are clear. Researchers increasingly show signs of 'review fatigue' and longer notice may be helpful from that perspective. Based on our experience, HFRI should count on at least 3 and preferably 6 months of lead time to recruit a panel
- To create a **better spread of the 'large' calls in a specific year**, avoiding the creation of a domino effect for the subsequent calls. The deadlines of the calls in 2019, for example, with two major calls planned for the first half of the year two months in a row (see Table 5, above) was unfortunate. The calls planned for 2022 show a more appropriate spread but the concentration of all major calls in one year is a source of concern

3.5 Image of the HFRI in the national and international R&I community

This section responds to the evaluation question "How is HFRI regarded in the national and international research and innovation community?"

HFRI states in its communications that its activities are guided by the core values of "excellence, scientific quality, meritocracy, transparency, continuity and consistency". The image of HFRI in the Greek research community, based upon our interviews and surveys, shows it has succeeded in doing so.

The most prominent achievement of the HFRI is that it gained **legitimacy** in the eyes of the research community. Overall, interviewees had a highly positive view on the fairness of the evaluation process, with the acknowledgement that a 100% perfect peer review system is close to impossible to reach.

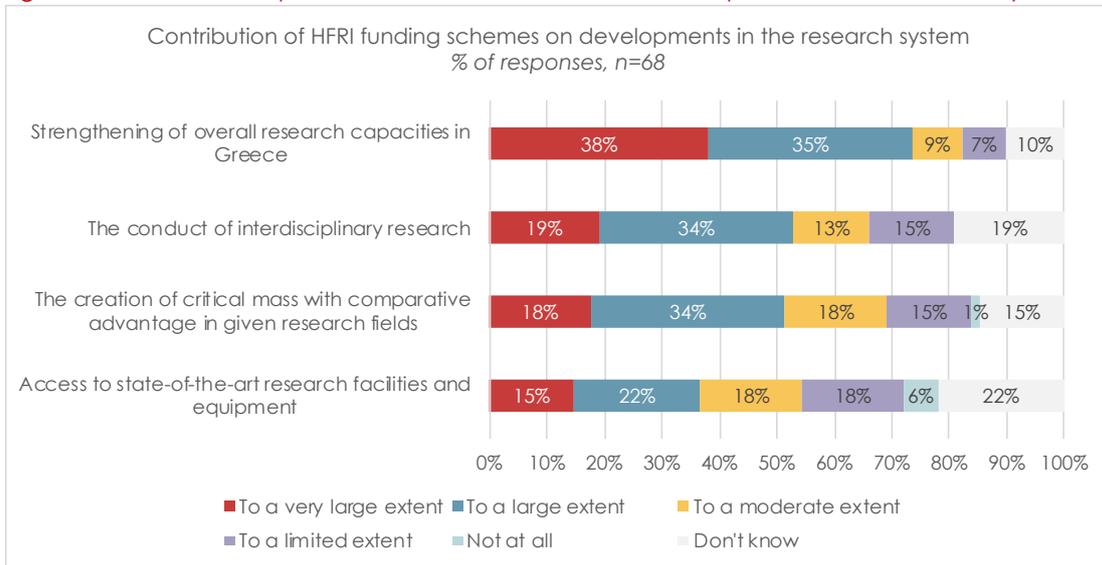
The image is one of a research council funding high quality research and adopting funding schemes that are of high importance and value for the national research system and society at large. HFRI's activities are perceived as complementary to the ones of the other funding bodies in the country and the degree of competition for funding is seen as a driver for quality.

Survey respondents were highly positive on the contribution of the HFRI funding schemes to a **strengthening of the research capacities** in the country (indicated by 70% of respondents – see



Figure 25). HFRI funding also supported the creation of critical mass, in scientific areas of competitive advantage, and allowed for the conduct of interdisciplinary research (50%). Only according to some (30%) did HFRI funding have a positive effect on access to research facilities and equipment.

Figure 25 Stakeholder opinion on HFRI's contribution to developments in the research system



Source: Technopolis Group, 2021. Q: To what extent do you feel that the HFRI funding schemes contribute to ...?

3.6 Alignment of HFRI financing with the broader Greek Science, Technology and Innovation (STI) priorities

This section focuses on the evaluation question "To what extent is HFRI financing in line with the broader Greek Science, Technology and Innovation (STI) priorities?"

In this section we assess the relevance of HFRI and the (actual and expected) value of its activities for the attainment of the national R&I policy objectives, as they were defined for the period 2014-2020.

The 2014-2020 Partnership Agreement for the Development Framework (so called National Strategic Reference Framework - NSRF) is the main strategic plan for growth in the country; the National Smart Specialisation Strategy (RIS3) is the main R&I policy implementing it (see Section 2.4, above).

In Section 3.6.1 we describe the relevance and value of HFRI's activities with the strategic focus and intervention areas defined in the national RIS3. In Section 3.6.2, we focus on the NSRF overarching main policy objective: the competitiveness of the Greek economy.

3.6.1 Relevance and value of HFRI for the attainment of the Smart specialisation objectives

The National RIS3 2014-2020 defined 3 strategic focus areas for the EU and national funding of R&I in the country: investment in the creation and dissemination of New Knowledge; investment in Research and Innovation; and development of innovative mindset, institutions and RTDI links with society. Four main intervention areas were defined: 1) capacity building, 2) Reinforcement of the RTDI activities, 3) Support to infrastructures, 4) extroversions and networking.



While these intervention areas focused on maintaining and strengthening the Greek R&I system, the country was confronted in 2016/2017 with a **major challenge for the Greek national innovation system**: the loss of skilled human capital, i.e. **brain drain** (see Section 2.3, above). The brain-drain issue was recognised as a key challenge by national policymakers who defined 'reversing brain drain' as a major objective in the Greek Strategy for the European Research Area – Roadmap 2015-2020.

HFRI directly addressed the brain drain problem through its funding schemes – in particular, the ones for the PhD graduates and PostDocs. Recognising the gravity of the situation, it prioritised the calls for these two groups 'at risk of brain drain' in 2016/2017, ran two calls for PhD scholarships in 7 months (2016-2017) and two calls in 11 months for the Postdoctoral grants (2017-2018), placing a significant share of the budget available for Postdoctoral grants on the first call (see Sections 3.1.1 and 3.1.2, above). To ensure adequate funding opportunities for the younger faculty members, HFRI organised the related calls per 'category of proposal', i.e. for the first two career levels and the two last ones separately.

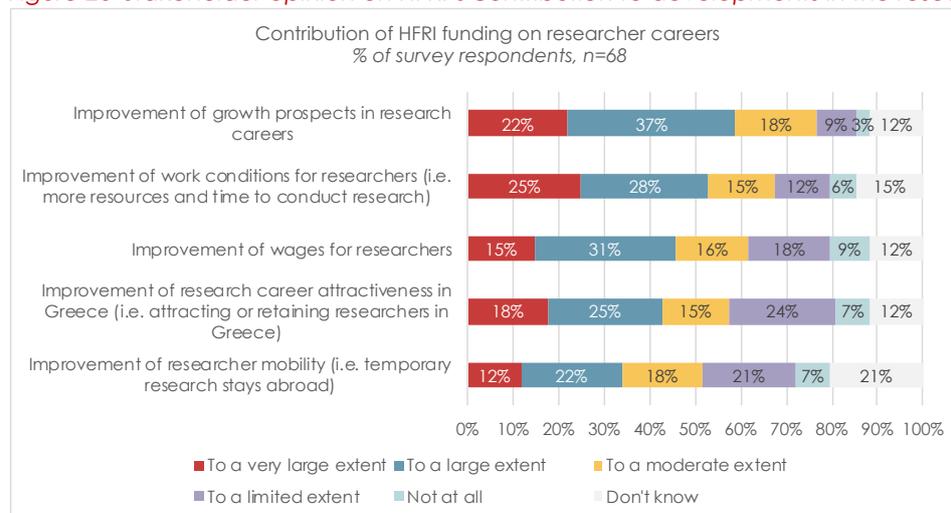
HFRI funding tackled the **primary drivers for the brain drain**: the lack in career prospects and for career researchers, the lack in funding for research (see also Section 2.3, above), apparently with success.

Various examples emerged during our stakeholder consultations on the effects of HFRI funding for the academic careers of young researchers, the avoidance of brain drain, and the creation of brain gain, confirming the data collected by HFRI in its survey. According to this survey, targeting the beneficiaries of the first PhD and Postdoc calls,

- About 50% of the PhD candidates and Postdocs would have left the country if they hadn't received the scholarship
- About 15% of the postdoc researchers came back home because they had gained HFRI funding

According to the researchers surveyed in the context of this evaluation, HFRI funding had a positive effect on the improvement of their career growth prospects and their work conditions for research, in terms of resources and time availability. Positive effects on the researchers' wages and Greece's attractiveness for research careers were more limited.

Figure 26 Stakeholder opinion on HFRI's contribution to developments in the research system

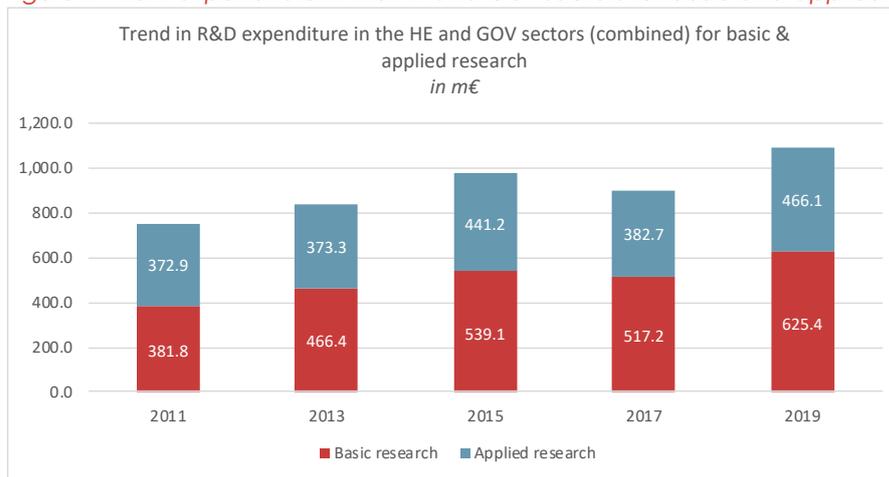


Source: Technopolis Group, 2021. Q: To what extent do you feel that the HFRI funding schemes contribute to ...?

A primary tool for HFRI to support the national Smart Specialisation Strategy '**reinforcing research activities**' was its funding, - seeing the 'division of labour' with the GSRI, this includes the **focus of its funding** on investigator-driven fundamental research.

Eurostat data show a positive the trend in R&D spending for basic and applied research in the Greek research organisations (both HEIs and research institutions) in 2019, exceeding the volume of expenditures in 2015.

Figure 27 R&D expenditure in the HE and Gov sectors for basic and applied research



Source: Eurostat, 2021. GERD by sector of performance and type of R&D [RD_E_GERDACT_custom_1620585]

The bibliometrics analysis conducted in the context of this study showed that HFRI funding has allowed for a significant sharing of the knowledge gained to the research community worldwide and suggests a significant contribution of HFRI to the strengthening of research competitiveness in the Greek system (see Section 3.1.2, above)

Interviewees highlighted the significant effects that the meritocratic approach taken to research funding in the HFRI had on the research system in general. It installed an evaluation culture for research that was more in line with the international standards and helped in overcoming the bad habits of favouritism (see also Section 2.3, above).

By providing an arena where researchers and research proposals compete, HFRI sets a **high standard for research quality** – not only for the funding it provides, but it also sets a standard against which research-performing organisations judge quality, and therefore tends to quality-assure the national basic research effort.

The value of HFRI's funding goes **beyond the benefits for the research community**, though.

Greece's research capacity has been strongly influenced by European agendas, and the country has benefited a great deal from this – for example in IT, where the EU Framework Programme has in the past been an important driver of capacity-building (see also Section 2.2, above). Most of the EU funding is in applied research and innovation, and much of it is shaped by EU rather than Greek agendas. It is therefore important for Greek policy to ensure that there is national capacity in both fundamental and more applied research to **meet national needs**. The ERC does not help with this – it is an élite programme aiming to build a level of effort and excellence at a higher level than that of the Member States.



In addition, in the context of the EU Framework Programme and structural funds which both focus on applied research and industrial innovation, HFRI makes it possible for researchers to obtain external funding for research in the social sciences and humanities, which are important for **social development**, and which play a growing role in work addressing the so-called societal challenges.

3.6.2 *Supporting the strengthening of competitiveness of the national economy*

As mentioned in Section 2.4, above, the 2014-2020 Partnership Agreement for the Development Framework (so called National Strategic Reference Framework - NSRF) had the strategic objective to tackle the structural weaknesses that contributed to the economic crisis, as well as other economic and social problems caused by it. A primary, overarching objective was to strengthen the competitiveness of the Greek economy.

Funding a sufficient level investigator-initiated research is a necessary (but not sufficient) condition for maintaining a well-functioning national innovation system. Significant research literatures dating back to the 1960s in both science policy and economics provide evidence about the economic and social impacts of basic as well as more applied research.

Both Investigator-initiated and thematic research are needed: thematic research to solve problems that society identifies and prioritises; investigator-initiated because we don't know everything, and don't even know what we don't know.

Nelson/Arrow market failure is the economic reason why governments fund fundamental research with high levels of subsidy, and innovation with lower levels. This market failure is the problem that it is hard for firms to appropriate and exploit the results of fundamental research. Rather, these easily spill over to society (often over long periods of time). Fundamental knowledge has so many (known and unknown) uses, that capitalists cannot appropriate it and therefore rarely fund it. Hence, the state does, and reaps huge social returns, often over long periods (cp time between discovery and Nobel Prize). The more specific and applicable knowledge is, the easier it becomes to appropriate it and, usually, the shorter the time-to-market. Hence, we subsidise innovation less than research.

While in the abstract world of economics the results of basic research are public goods, it is not possible to free ride on the fundamental research done in the rest of the world. Understanding, choosing, and making use of the results of fundamental research requires people who themselves can do basic research, as well as specialised equipment and other resources. It also requires engagement by national researchers in international scientific communities, otherwise they can only see results when they are published, and they know nothing either about work in progress or about how the research agenda is changing. Typically, therefore, countries increase their basic research effort when they move from technology catch-up to looking for ways to get ahead of competitors in the more advanced countries.

As a 'moderate innovator', Greece is in that position. It has come very late to the rightful decision.



4 Conclusions and recommendations

In the sections below, we first give a summary of the key findings from our analysis (Section 4.1) and then formulate our conclusions and recommendations (Section 4.2).

4.1 Summary of the key findings

Attainment of the objectives

HFRI is a young institution, but it has developed amazingly quickly to operate well and at scale within 4 years. HFRI has succeeded in reaching close to all its operational objectives in terms of organisational set-up, financial resources, and funding distribution to the research community. The high-level commitment of HFRI's staff, Scientific Council members and the Greek research community at large lies at the basis of this success, testifying to the high importance of this initiative for the Greek research system. To date, HFRI has distributed 50% of its total budget.

HFRI is also attaining its strategic objectives. It provided important opportunities for doing unique/original research and for the personal development of Greek researchers, at all stages in their career and in all fields of research. HFRI contributed to constraining the brain drain phenomenon, facilitated the return of early-career researchers, enabled the renewal or acquisition of high value research equipment, and supported participation of Greek researchers in Europe-wide research infrastructures in the field of Social Sciences and Humanities. Through the science & society calls, the HFRI aimed at responding to societal needs and disseminating scientific knowledge in society. The continuity of its funding is an important added value. Bibliometric data show that HFRI allowed for a significant sharing of knowledge gained by the researchers funded and funded high-quality research.

Operational efficacy as an independent research funding organisation

HFRI's cost of administration is 5% of its grants budget, which is within the international norm and indicates good operational management.

HFRI has been granted autonomy for decision-making on strategy, which is standard international practice for research councils. HFRI has the legal status of a private non-profit organisation, but for administrative, financial, and human resources management matters, it has de facto the status of a public administration body. The bureaucratic and institutional implications of this positioning have considerably affected HFRI's functionality, including its understaffing and delays in the implementation of its operational decisions. The government's recent decision to abolish the deputy director position deprives HFRI of its internal capacity for administrative oversight.

HFRI is underfunded compared to the needs in the Greek research community. Its overall success rate (15%) is low by international standards and the even lower success rates in the postdoc and faculty instrument is very problematic. Considering the national context and the urgent need to constrain brain drain, HFRI's capacity to however ensure an adequate funding of the needs among PhD candidates is an important outcome of the Foundation's activities. The relatively high funding rates for research in the field of SSH seem justified in the context of the limited public funding opportunities for this field of research, in the country and internationally.

As it stands, the project monitoring framework is results-oriented and good practice. However, a more general results-based evaluation framework at the institutional level is lacking, both from a conceptual and operational perspective. It poses a significant limit to the collection of strategic intelligence that would support HFRI in its strategy building and to its capacity for



reporting on the value and relevance of its financing and activities – to national policy makers and society at large (accountability).

Highly positive is the quality of HFRI's communication with the research community and service delivery. Particularly impressive is the HFRI Portal. One would, however, expect a stronger focus in HFRI's communication strategy on enhancing public understanding of science.

HFRI set-up and operations in the international context

The structure of HFRI's governance bodies and their mandates is in line with good international practice. The highly detailed description of HFRI's mandate and tasks in its legal base however *de facto* limits the space given to the HFRI General Assembly and Scientific Council for strategic decisions and the introduction of change.

The role of the Advisory Committee should be clarified, and the proportion of female Scientific Council members (which is extremely low) needs to be improved.

The HFRI instrument portfolio includes the (internationally) normal repertoire of 'basic research' funding instruments. Its funding streams for PhD students and early-career researchers are in line with the international trend among research councils to use non-thematic funding instruments, which aim to support and develop the structure of the national research community. Set in the context of the fragmented national R&D landscape, a bottom-up and non-thematic centre-of-excellence funding instrument would enrich HFRI's portfolio and strengthen its contribution to the national research system.

There is a fundamental discrepancy in the description of HFRI's mandate between the Annex to the EIB loan agreement and the HFRI Founding Law (and the expectations set based on it). The description in the EIB Loan Agreement aligns the HFRI with the internationally normal tasks of a research council, funding investigator-driven basic research and ensuring the diffusion of scientific knowledge in society. This also reflects the 'division of labour' that *de facto* has been established in the Greek R&I governance system for the public funding of research, with the HFRI as research council providing support for individual researchers and non-thematic research projects (without geographical criteria), and the GSRI as an innovation agency, in charge of (predominantly ESIF-funded) support for applied research and industry-oriented innovation. The Founding Law, instead, words HFRI's mandate in more general terms ("the promotion of research and innovation") and assigns tasks to the HFRI that are typically competence of an innovation agency ("to support, through lump-sum funding, the creation and operation of start-ups to capitalise on research results" and to cover "costs for the protection of intellectual property rights"). For the HFRI to keep on functioning as a professional research council, in line with international standards, it is of critical importance that this discrepancy is solved.

Quality of the project selection and assessment processes

HFRI's approach to the peer review process reflects international good practice and uses the ERC as a model. The HFRI shows a high level of transparency and adopts the normal processes to ensure fairness of the judgments. Room for improvement is in the quality of the evaluation reports, the measures to prevent appeals on matters of detail, the stability of processes and assessment criteria over time, and the definition of the PI assessment criteria.

The categorisation of the scientific disciplines has caused a suboptimal number of panels and an imbalance in their assessment work. The limited engagement of female and international evaluators and reviewers is to be addressed.

HFRI's proposal assessment processes are very closely aligned with the ones adopted in the ERC. However, the two-stage evaluation processes are too lengthy and over-complex for the



current types of instruments that the HFRI funds. The use of a one-stage procedure, with a clearer division of labour between remote reviewers and panel members, would simplify the process and address the major criticism of HFRI, i.e., its time-to-grant. In addition, a clearer division of labour between remote reviewers and panel members would be appropriate.

The time-to-grant challenge needs to be addressed. Not only does it pose a risk to HFRI's professional image, it also creates funding continuity issues and hinders the beneficiaries' research planning.

Image of the HFRI in the national and international R&I community

HFRI is well-respected and close to the heart of the Greek basic research community. It established its legitimacy in the eyes of the research community because funding decisions are taken via peer review by members of the research community, free from any other influence (such as national thematic priorities, or politics) and therefore helps maintain academic freedom. HFRI is considered to fund high quality research and adopts funding schemes that the research community considers of high relevance - for the national research system and society at large. HFRI has strengthened research capacities in the country and improved researchers' career growth prospects. HFRI funding also supported the creation of critical mass, in scientific areas of competitive advantage, and allowed for the conduct of interdisciplinary research.

Alignment of HFRI financing with the broader Greek Science, Technology and Innovation (STI) priorities

HFRI's strategy and funding activities are strongly aligned with the national R&I policy and its priorities. It directly contributed to addressing one of the major challenges for the Greek R&I system, i.e. 'brain drain'. HFRI supported the RIS3 intervention area for the reinforcement of the RTDI activities by providing an arena where researchers and research proposals compete against a high standard for research quality. Going beyond the strengthening of the research system, HFRI enhances capacity in fundamental research that meets national needs. It also makes it possible for researchers to obtain external funding for research in the social sciences and humanities, which are important for social development, and which play a growing role in work addressing the so-called societal challenges.

Finally, the focus of HFRI's research funding (basic research) also responds to the primary, strategic objective of national policy, i.e. to strengthen the competitiveness of the Greek economy. A funder like HFRI is an essential component of any effective national innovation system, and one whose importance increases with economic and social development, during which production and consumption become increasingly knowledge-

4.2 Conclusions and recommendations

HFRI is the first organisation of any size to fill the 'basic' research funding gap in Greece. A funder like HFRI is an essential component of any effective national innovation system, and one whose importance increases with economic and social development, during which production and consumption become increasingly knowledge-based, and the scope to remain competitive while relying on imported knowledge declines. It is therefore important for Greek policy to ensure that there is national capacity in both fundamental and more applied research to meet national needs. The ERC does not help with this – it is an élite programme aiming to build a level of effort and excellence at a higher level than that of the Member States.



HFRI is nonetheless a small organisation with a small budget, not yet sufficient to meet the needs of the current Greek system, let alone the growing needs for research as Greece continues its economic recovery and along the path of development.

The current underfunding, and the accompanying low success rates, may cause serious problems for the whole system and reduce the quality of HFRI's review process, lead to distrust and demotivation of applicants and ultimately, undermine HFRI's legitimacy. An increase in its funding budget is critical for HFRI to maintain its international standards, continue supporting the Greek research system, and prevent brain drain,

We recommend the Greek government significantly to increase its contribution to HFRI from the national sources compared to the amount granted in the 2016-2021 period.

In the national R&I governance system, HFRI has the function of basic research funding organisation. There is *de facto* a clear division of roles with the GSRI which acts as the country's innovation agency. The current description of HFRI's mandate in the Founding Law, however, undermines the coherence and complementarity that has been established between these two research-funding bodies, attributing tasks to the HFRI which in international practice, are typically in the competence of an innovation agency. In addition, it fails to make an explicit reference to HFRI's function as a research council, focused on investigator-driven basic research and science communication to society.

Internationally, HFRI's function as a basic research funding organisation should entail a measure of operational independence from the rest of government

- To prevent 'basic research' resources being diverted to other purposes, and so undermining the role of HFRI
- To maintain its legitimacy and retain the confidence of the research community

HFRI's Founding Law appears to be unfit for purpose, specifying processes, routines, and structures in such a level of detail that it *de facto* deprives the HFRI of the right to determine its own organisation chart and institutional framework, thus considerably limiting its autonomy.

The recent amendment to the Law, abolishing the Deputy Director function and setting the profile of the (new) Director in predominantly scientific terms, appears to be based upon an underestimate of the need in a research council for a dual leadership (scientific and administrative).

Further, despite its legal status as private non-profit organisation, HFRI is obliged to apply the public sector administrative, financial, and human resources regulations. With GSRI's role as 'middleman' between HFRI and the Ministry of Development, this causes inflexibility and long delays. Most important, it is responsible for HFRI's current understaffing and the risk of losing highly competent staff members because of the impossibility to offer them any career prospect. The constraints set by Law on HFRI's autonomous management of its human resources therefore risk undermining the results of the efforts invested so far. This is a matter of the highest urgency.

We recommend the Greek government formally to recognise HFRI's function in the Greek R&I system as the public funding organisation responsible for investigator-driven basic research and the communication of scientific knowledge to society, complementing the research funding tasks of the GSRI, in line with international practice. In the mid-term, a **permanent position** for the HFRI should be envisaged, funded by the Greek state.

The Founding Law needs revision, bringing it more in line with international practice and foreseeing the use of dialogue-based performance agreements. It should give HFRI the status of an independent agency, tie it to achieving a small number of high-level goals, and



otherwise make it autonomous in day-to-day practice. HFRI's task should nonetheless be tightly enough defined to prevent it from moving from researcher-initiated research into other areas, and sufficiently protected to make it hard for other interests to raid its already limited resources.

In the very short-term, an amendment to the Law is needed that excludes HFRI from the provisions of staff hiring, promotion, salaries etc that apply to the public administration sector.

The recent abolition of the Deputy Director function should be re-considered.

HFRI's governance structure, funding and non-funding processes are in line with international practice, with due attention to the key principles of transparency and fairness. HFRI uses ERC as a model for its operational processes, which is widely seen as the 'gold standard' in the international community. HFRI has succeeded in gaining legitimacy in the eyes of the community while ensuring continuity in the highly needed basic research funding and good operational management. It is **a remarkable achievement**.

There have been some inevitable teething problems and lessons to be learned. A refinement of HFRI's strategy and processes is therefore appropriate. The adaptation of some processes to the specific context of the Greek research community and its current state of development would also be beneficial.

In relation to its **non-funding activities**, we recommend HFRI to devote more attention and efforts to collecting strategic intelligence on the research system that is needed for its own strategy making and in support of national R&I policymaking. A closer contact to the overall R&I policy and a more intense collaboration with the bodies in the R&I governance system that collect and have access to strategic intelligence would be beneficial from this perspective.

We *highly* recommend HFRI to develop an institutional evaluation framework that is result-oriented and can serve its needs for accountability towards the government and the Greek citizens. This evaluation framework should inform the (projects) monitoring framework and its implementation. We also encourage HFRI to improve its communication to the public, to enhance the public understanding of science.

In relation to the **funding instruments**, we recommend the HFRI to take up its 'broader' role of a research council in the Greek R&I system, like research councils internationally, and aim to support and develop the structure of the national research system. We suggest starting with a centres-of-excellence programme as a tool for capacity-building and de-fragmentation of the Greek (basic) research system.

In relation to its **peer review-based evaluation processes**, we recommend the HFRI to ensure higher quality of the evaluation reports and improve the descriptions of the evaluation criteria so as to increase transparency and reduce the high number of appeals on matters of detail. The proportion of international experts as well as women among both reviewers and panel members should be increased. Accompanying measures that can be taken against the low success rates, such as proposal bans for persons who submitted proposals with exceptional low quality, should be discussed with researchers and experts. We also suggest reconsidering the current categorisation of the disciplines, spreading the assessment work more equally over the panels and reducing their number.

We recommend the HFRI to adopt a one-stage procedure for all its instruments. In particular for the Post-Doc and Faculty Member calls, there should be a clearer division of labour between remote reviewers and panel members, with remote reviewers taking care of the assessments of the scientific quality while the panel members assess the proposal in its entirety and set it in context. We recommend the HFRI to make more use of scientifically qualified administrative staff in the selection of the panel members and external experts, under the



authority of the Scientific Council. We also suggest revising the reviewers' remuneration policy to keep the review process costs within sustainable limits.

Various of the above-mentioned recommendations and suggestions aim at addressing (also) the major criticism to HFRI, i.e., its time-to-grant. We recommend installing additional measures such as launching the search for panel members/reviewers prior to the call deadlines and a better spread of the 'large' calls across the year, in order to avoid peaks in the workload for both administration and applicants.

We *highly* recommend the HFRI to establish a stronger connection and exchange of experience with other research councils in Europe, in particular the smaller research funders. Most of these organisations are also members of Science Europe, which offers various international learning opportunities.



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Appendix B Short CVs of the expert panel members

Prof. Erik Arnold,

Erik Arnold is co-founder and Chairman of the Technopolis Group, Adjunct Professor in Research Policy at the Royal Institute of Technology (KTH) Stockholm and a visiting Professor at the Manchester Institute of Innovation Research. He has worked in research and innovation policy and evaluation since 1980, covering work in a wide range of disciplines handling research and innovation policy. His work spans over 35 countries as well as the European Commission and a range of international organisations including the OECD, World Bank, Nordic Council of Ministers, ESF and COST. He is expert in the design, management and implementation of large- as well as smaller-scale evaluations of research and innovation organisations, programmes and policies. He has particular expertise in integrating peer review and social-scientific evaluation methods.

Erik has played a major role in innovation system reviews for the OECD and innovation policy mix reviews for CREST/ERAB in South Africa, Norway, France, Colombia, Sweden, Finland and Latvia.

Erik has conducted over 200 evaluations of research programmes, performers and funders while at Technopolis. Among these is a number of large evaluations of research and innovation funders, where it has been crucial to understand processes and governance in such organisations. These include Innovation Norway, the Research Council of Norway (twice), The Academy of Finland (currently for the second time), Tekes (now part of Business Finland), the research council and former innovation agency in Austria (FWF and FFF), the Marsden Fund in New Zealand and the National Natural Science Foundation of China. He also drafted the evaluation of the Sixth EU Framework Programme. He has recently worked on research funding processes at UKRI, Formas (Sweden), SNSF, the Wellcome Trust and RCN.

Bea Mahieu

Bea is Partner at Technopolis Group. She has more than 20 years of experience in providing strategic policy advice to European, national and regional research and innovation (R&I) policymakers. Her key area of expertise is in the analysis of R&I systems and the assessment of the design, implementation and impacts of R&I strategies and funding programmes.

Bea has led various complex studies and/or was member of the study teams supporting R&I policymakers in Belgium, Bulgaria, Cyprus, Czech Republic, Ireland, Norway, and the UK as well as the region of Wallonia (Belgium) and the Basque country (Spain). Flagship studies include the development of a new national R&D evaluation and performance-based research funding system in the Czech Republic (2014/15), the evaluation of the Research Council of Norway (2011/12), and the International Audit of the Research, Development and Innovation System in the Czech Republic (2010/11). Bea also acted as rapporteur in the H2020 Policy Support Facility Specific Study, supporting the Bulgarian government in the reform of their national performance-based research funding system, where she authored the final report. Her most recent assignments (2020) were the evaluation of the national R&I framework programme (RESTART) and activities of the R&I Foundation in Cyprus, and two studies supporting the design of the internationalisation and R&I funding strategies for the Basque Region. She also advised the R&I Foundation in Cyprus on the design of their monitoring and evaluation system.

European Commission policies, initiatives and R&I programmes is a major strand of her activities. Bea has designed the methodology and led the implementation of numerous evaluations and



impact assessment studies in the field of R&I, ranging from programmes supporting research (e)infrastructures and R&I in space technologies to specific support programmes for SMEs. Her long-term thematic expertise is in the field of ICT and ICT-enabled innovation, including the digitalisation of public services and industry. Recent assignments include the Impact Assessment Study for the European Institutionalised Partnerships, covering the 13 public-private partnerships that were candidates for funding under Horizon Europe (DG RTD, 2019-20).

Nikos Maroulis,

Nikos Maroulis is Partner at Technopolis Group with more than 20 years of experience in the field of policy design and evaluation, regional development and analysis of innovation systems.

During his career, he has been involved in several projects for the European Commission as well as for national and regional governments and agencies in Greece, Cyprus, Romania, Slovenia, Slovakia, Uzbekistan and Ukraine. A recent assignment was the European Commission H2020 Policy Support Facility (PSF) which provided guidance to governments of EU and Associated Countries on the transformation of their research and innovation systems, where he acted as Framework Contract Manager (2016-20) as well as project manager for the Specific Support studies for Cyprus, Slovakia and Slovenia. Previous assignments include the studies providing technical assistance and support for the development of the national Smart Specialisation Strategy of Greece and the Regional Smart Specialisation Strategies of five Greek regions (2013/14), and the ERAWATCH study coordinating the production of annual reports assessing the national research and innovation systems and public research policies of the EU member states (2008-2011).

Dorothea Sturn

Dorothea STURN works as scientific project manager and senior scientist at the Centre for Social Innovation (ZSI). She led various national and international projects (see e.g. PRO-Ethics – Participatory real life experiments in research and innovation funding organisations on ethics (2020 – 2023, H2020, Coordinator), HERAS - Higher Education, Research and Applied Science in Kosovo) and acts as member of Swiss National Science Foundation's Compliance Committee. She is co-author of the Austrian Research and Technology Report and has evaluated numerous national and international research funding programmes.

Until 2016, she was Managing Director of the Austrian Science Foundation (FWF), Austria's central funding organization for basic research. Previously she worked at the University of Vienna as Head of the Quality Assurance and Evaluation Unit where she developed an informed peer review scheme for the appraisal of research quality in different institutional settings. At the Austrian Research Promotion Agency (FFG) she was responsible for various schemes fostering co-operation between science and industry, including the Austrian competence centres, and earned her particularly strong experience in programme management. She holds an MA and a PhD in Economics and has lectured on public economics and on political economy.

Her main areas of expertise revolve around research funding, science and innovation policy, regional innovation systems, HEI development and governance, peer-review and smart specialisation. Due to her many years of experience in the FWF, SNSF and with the eight European research funding organisations in the context of PRO-Ethics, she is particularly familiar with the processes and structures in research funding organisations and has a broad overview of common practices and central challenges. She was a member of the panel for the 2012 evaluation of the Research Council of Norway and is currently a member of the panel for the evaluation of the Academy of Finland.



Appendix C Examples of Research Council Legal Statutes and Performance Agreements in international practice

C.1 Legal Statutes of the Swedish Research Council ("Standing Order")

C.1.1 Tasks

Section 1 The Swedish Research Council shall provide support for basic research of the highest scientific quality in all areas of science.

The Swedish Research Council shall

1. promote the quality and renewal of Swedish basic research
2. support researcher-initiated research
3. initiate and support interdisciplinary investments in research
4. allocate funds for internationally high-quality research
5. promote and initiate international research collaboration and exchange of experience, and
6. evaluate research and assess the research and its scientific quality and significance.
Regulation (2018: 17)

Section 2 The Swedish Research Council shall also

1. carry out research policy analyses and advise the government on research policy issues
2. initiate and support strategic investments in research and research infrastructure
3. plan access to research infrastructure in the long term in collaboration with other research funders and research providers
4. allocate funds to national research infrastructure and international commitments
5. follow up Sweden's membership in Swedish, European, and international organizations and infrastructures in terms of costs in relation to participation
6. in collaboration with universities and colleges, contribute to the creation of good research environments, promote high-quality postgraduate education, support researchers at the beginning of their careers and promote the mobility of researchers
7. participate in and promote Swedish participation in the European Union's activities in research and technological development
8. represent Sweden in the EU organizations and international organizations that the Government Offices (Ministry of Education) informs the Council about
9. be overall responsible for coordinating communication on research and research results
10. be responsible for communication about research and research results in their fields
11. develop collaborations with the countries with which Sweden has entered into agreements in the research area in cases where the Government Offices (Ministry of Education) informs the Council
12. integrate a gender equality perspective into the agency's activities and promote gender equality in the distribution of research funds
13. promote the inclusion of a gender perspective in the research funded by the Authority, where applicable



14. initiate attention to ethical issues in research and disseminate information on research ethics issues
15. support and advise the Swedish UNESCO Council within the framework of UNESCO's scientific work
16. initiate and support investments in artistic research
17. support and develop the conditions for clinical studies in Sweden
18. improve the availability and facilitate the use of register data for research purposes and assist researchers with information on relevant provisions on registers
19. responsible for the communication system Swedish University Computer Network (SUNET), and
20. assist the steering group for the agreement between the Swedish state and certain county councils on cooperation in medical education, clinical research and development of health care (ALF agreement) with administrative support. Ordinance (2018: 1881)

C.1.2 Management

The Swedish Research Council is chaired by a board.

The board shall consist of nine members.

C.1.3 Organisation

The Swedish Research Council, together with the Swedish Agency for Innovation Systems, the Research Council for the Environment, Areal Industries and Community Development, the Research Council for Health, Working Life and Welfare, the Swedish Energy Agency and the Swedish Space Agency shall be part of a coordination group consisting of heads of authorities. The group will collaborate and jointly prepare analyses, strategies and research programs and otherwise take initiatives to develop and renew the forms of research activities.

Regulation (2019: 146).

The Swedish Research Council shall provide premises and perform administrative and administrative tasks for them

1. The Board of Appeal for Ethical Review, and
2. The Genetic Engineering Board.

C.1.4 Councils and committees

The Swedish Research Council has the following councils and committees:

- The Subject Council for the Humanities and Social Sciences, which in the matters decided by the Swedish Research Council, decides on the distribution of funds for research in the humanities, social sciences, religious studies and jurisprudence,
- The Subject Council for Medicine and Health, which in the cases decided by the Swedish Research Council, decides on the distribution of funds for research, both basic research and applied research, among other things in order to bridge the gap between experimental biomedical research and patient-centered research in medicine, including care science, dentistry, and pharmacy,
- The Subject Council for Science and Engineering, which in the matters decided by the Swedish Research Council, decides on the distribution of funds for research in science, mathematics and engineering,



- The Council for Research Infrastructures, which in the matters decided by the Swedish Research Council, decides on the distribution of funds to the research infrastructures,
- The Education Science Committee, which in the matters decided by the Swedish Research Council, decides on the distribution of funds for research and education at doctoral level with relevance to the school's and preschool's development,
- The Committee for Artistic Research, which in the matters decided by the Swedish Research Council, decides on the distribution of funds for artistic research,
- The Committee for Clinical Treatment Research, which decides on the distribution of funds that have been allocated to the Swedish Research Council for Clinical Treatment Research, and
- the additional committees determined by the Swedish Research Council.

Regulation (2021: 193).

The councils and committees are responsible for their decisions and activities before the Swedish Research Council. The councils and committees shall, with the exception of the committee for clinical treatment research, in their decisions follow the principled and strategic decisions made by the Swedish Research Council. Regulation (2018: 17).

Each council and committee shall, at the request of the Swedish Research Council, prepare a basis for the authority's decisions on matters of principle and strategy, and may raise such issues with the authority on its own initiative.

4.2.1 Subject advice

Each subject council shall consist of nine members, except for the subject council for medicine and health, which shall consist of eleven members. The subject council for medicine and health must include at least one member from the healthcare sector and at least one member from the pharmaceutical industry or the biotechnology industry.

A subject council is decided when a majority of the members are present.

If a matter is so urgent that the subject council does not have time to meet to consider it, the matter may be decided through contacts between the chairman and the other members.

4.2.2 Council for Research Infrastructures

The Council for Research Infrastructures shall consist of a chairman and the number of other members determined by the Swedish Research Council. The Swedish Research Council shall appoint the chairman and other members. The majority of the members will be researchers.

4.2.3 Committees

The Educational Sciences Committee shall consist of a chairman and the number of other members determined by the Swedish Research Council. The Swedish Research Council shall appoint the chairman and the other members. The majority of the members shall be researchers, and among the members there shall be representatives of various scientific disciplines with relevance to educational scientific research. Regulation (2010: 1183).

The committee for artistic research shall consist of a chairman and the number of members determined by the Swedish Research Council. The Swedish Research Council shall appoint the chairman and other members. The majority of the members must be active in artistic research or development work at a university or college. Regulation (2014: 101).

The Clinical Treatment Research Committee shall consist of a chairman and twelve other members. The Government shall appoint the chairman and six other members, of which three



members shall be appointed on the proposal of the Swedish Research Council. Before submitting its proposals to the Swedish Research Council, the Council shall consult with the Swedish Agency for Innovation Systems. The regions shall appoint six members. Regulation (2019: 1075).

C.1.5 *Jobs and assignments*

The Director General is the head of the authority.

Six of the members of the **Swedish Research Council's board** shall be appointed in accordance with the ordinance (2012: 520) on electors' assemblies at research councils and subject councils.

Three of the members of the Swedish Research Council's board, including the chairman, will be appointed by the government. *Regulation (2012: 521)*.

The Chairman of the Board and other members, except the Director General, shall be appointed for three years. No one may be appointed a member for more than two consecutive terms.

If a vacancy arises for a member who has been appointed in accordance with the ordinance (2012: 520) on electors' assemblies at research councils and subject councils, the government shall, on a proposal from the Swedish Research Council, appoint a new member for the remaining part of the term. *Regulation (2012: 521)*.

Nine members of each **subject council** shall be appointed in accordance with the ordinance (2012: 520) on the assembly of electors at research councils and subject councils.

The two members of the subject council for medicine and health shall be appointed by the Government. *Regulation (2012: 521)*.

The members of the Subject Council shall be appointed for three years. A person may not be appointed a member for more than two consecutive terms.

If a vacancy arises for a member who has been appointed in accordance with the ordinance (2012: 520) on electors' assemblies at research councils and subject councils, the government shall, on a proposal from the Swedish Research Council, appoint a new member for the remaining part of the term. *Regulation (2012: 521)*.

For each of the four subject areas humanities and social sciences, medicine and health, natural and technical sciences and educational sciences, as well as for research infrastructures, there shall be a general secretary with high scientific competence. The Secretary General shall provide the authority with the necessary competence and experience within its area of activity.

The **Secretary General** shall be employed for a fixed term. The total period of employment may exceed six years only if there are special reasons. *Regulation (2019: 336)*.

C.1.6 *Distribution of funds*

A decision by the Swedish Research Council or a council or committee within the Swedish Research Council to grant funding may not exceed six years and shall be combined with conditions for the use of the funds. Funds for the recruitment of prominent researchers may, however, be granted for ten years. The decision must state who is the recipient of the funds and that the recipient is responsible for the funds being used in accordance with the conditions set.



If the activity for which funding has been granted does not meet the set requirements, the Swedish Research Council or the council or committee within the Swedish Research Council that has granted funding may decide that funding shall no longer be paid out. The decision may relate to a specific time. Information on this must be included in the decision to grant funds. *Regulation (2018: 17)*.

The Swedish Research Council may, after consulting the authorities that administer funds decided by the Swedish Research Council or a council or a committee within the Swedish Research Council, issue regulations on

- the information to be provided when applying for funding
- The conditions for the disposition and accounting of the funds, and
- the obligation for the recipient to submit to the Swedish Research Council an account of the activity for which the funds are paid.

C.1.7 Personnel Liability Committee

The Swedish Research Council shall have a personnel responsibility committee.

C.1.8 Applicability of certain regulations

The Swedish Research Council shall apply the ordinance (2012: 520) on the assembly of electors at research councils and subject councils and the staff representatives ordinance (1987: 1101).

C.1.9 Fees

The authority shall charge fees for basic connection and additional services within the Swedish University Computer Network (Sunet) from affiliated organizations. In the case of universities and colleges, the fees for the basic connection shall be charged in proportion to each higher education institution's share of the higher education sector's total income.

The authority may dispose of the income from the business. *Regulation (2016: 1260)*.

C.1.10 Appeal

Section 40 of the Public Administration Act (2017: 900) contains provisions on appeals to a general administrative court. Decisions other than decisions pursuant to section 24, second paragraph, may not, however, be appealed. *Regulation (2018: 1046)*.

C.1.11 Transitional provisions

1. This ordinance enters into force on 10 November 2009, when the ordinance (2007: 1397) with instructions for the Swedish Research Council shall cease to apply.

2. A person who, in accordance with older regulations, has been appointed a member until 31 December 2009 remains a member of the Board until a new Board has been appointed, but no later than 31 March 2010.



C.2 Academy of Finland - Performance Agreement

BETWEEN THE MINISTRY OF EDUCATION AND CULTURE AND THE ACADEMY OF FINLAND
PERFORMANCE AGREEMENT FOR 2020-2023 AND RESOURCES FOR 2020

C.2.1 STRATEGIC OPTIONS

Through its activities, the Academy of Finland promotes the following objectives of the Government Program and the Ministry of Education and Culture strategy:

- Finland is an internationally attractive place to study, research and invest. (Chapter 4 Objectives 1 and 3)
- The level of education and competence is rising. (Chapter 4 Objectives 1 and 5)
- Competence and continuous learning strengthen security in the transition to work. (Chapter 4 Objective 2)
- Finland is developing as an environment for research and innovation, and intangible and tangible investments are growing. (Chapter 4 goal 4)
- Sustainable development is the basis of operations and Finland will be carbon neutral in 2035. (Chapter 4, Objective 5 and Chapter 4, Annex 3 resource management meter 10)
- Creativity, Research and responsible activities renew society. (Chapter 4 Objectives 1, 3 and 5)

As a common goal of the administrative sector, the Academy of Finland actively promotes the Agenda 2030 programme and the Healthy Spaces 2028 programme and supports the achievement of the objectives of the programmes in its activities.

C.2.2 TARGET STATUS

The Academy of Finland supports the production of research knowledge and the increase of competence with its research funding and expertise, with an open operating culture and wide-ranging access to materials, supporting Finnish society in its knowledge-based innovation.

C.2.3 THE MISSION OF THE ACADEMY OF FINLAND

The Academy of Finland is a key funder of scientific research in Finland and an active player in national and international research in international science and innovation policy. The Academy of Finland raises with peer-reviewed competition the quality and effectiveness of research through its research funding and science policy activities, and strongly supports scientific developments.

C.2.4 PERFORMANCE OBJECTIVES

The Academy of Finland strengthens the quality and effectiveness of research and renovates science and research environments with its research funding and expertise.

The Academy funds researcher-driven and responsible research in all disciplines by utilizing international peer review .

International cooperation is an integral part of high-quality research and of the Academy's activities.

1. Social impact

Goal 1: The Academy of Finland promotes high-quality, responsible and influential research and fosters scientific development and the utilization of research and the resulting know-how.



Measures:

The Academy's research funding decisions are based on the quality and effectiveness of research and the Renewal of science.

The Academy is constantly developing its funding forms and the evaluation and decision-making processes for the best research funding applications to identify research projects.

Goal 2: The Academy works actively with key stakeholders in research, education and innovation to improve quality and effectiveness.

Measures:

The Academy actively participates in the development of the research and education system together with research Institutes, Ministries, Business Finland and other funders, both domestic and foreign. In developing its own activities, the Academy is constantly in close contact with various of these partners.

Measures:

The Academy produces high-quality science policy data and analyses it for use by various parties, and researches and develops ways of evaluating the effectiveness of research activities. These are openly made available to the public.

Measures:

The development of the State of Science type review will be continued by setting up a steering group and producing material in co-operation with stakeholders.

Goal 3: Internationalisation and international cooperation is part of supporting high-quality research and of the Academy's activities.

Measures:

The Academy promotes international cooperation that strengthens the quality, effectiveness and development of science. The Academy's form of financing and funding conditions support this objective.

Goal 4: The Academy promotes the availability of research materials and methods as well as research results in accordance with the principles of open science.

Measures:

The Academy requires the commitment of research projects to the openness of publications and research materials and methods.

Goal 5: The Academy of Finland promotes equality and non-discrimination in science and the goals of sustainable development.

Measures:

The Academy strengthens the implementation of equality and non-discrimination in its implementation and development of forms of research funding, funding conditions and evaluation practices, and in stakeholder work. The academy requires sustainability to be taken into account in the projects it finances as part of its responsible research practices.

2. Operational performance

The Academy of Finland operates with high quality, efficiency, and economy, taking into account the activities of the state economy boundary conditions.

Measures:



The Academy of Finland processes research-funding applications in a high-quality and efficient manner.

Measures:

Applicants for research funding receive up-to-date information on the Academy of Finland's funding principles and opportunities as well as decision-making processes.

3. Resource management

In accordance with the Group's objectives, the Agency develops and manages its work with the goal of ensuring a good working environment for the staff and their well-being, expertise, strong skills and their development, the promotion of mobility, and renewal of the state employer image. In its activities, the Agency shall take into account the principles of equality and value obligations from both an operational and a personnel policy perspective, reflecting also the Ministry of Education and Culture guidelines for operational equality and non-discrimination for 2020-2023. The facilities are in efficient use, in line with the state premises strategy. The procurement policy is based on centralized government services.

C.2.5 RISK MANAGEMENT

Risk management ensures the realization of the strategy and objectives, the operating conditions and the continuity of operations, and the legality and efficiency of the economy and operations and good governance. Risk is a possible future event which may contribute to the achievement of these objectives. Missing opportunities is also a risk.

The emphasis of the Academy's risk management is on the quality and correctness of research funding processes and operational reliability, security and data protection. The identified risk is also a gambling moment reduction in appropriations. The Agency's risk assessment is performed annually. Risk management is assessed regularly, at least once every three years.

C.2.6 OTHER BUSINESS

The Strategic Research Council operates in connection with the Academy of Finland. Its management costs do not exceed 3% on the Council's annual authorization. An international evaluation of the Academy will be launched during the contract period.

C.2.7 VALIDITY AND MONITORING

The objectives set out in this Agreement and the implementation of the Agreement shall be evaluated annually in a 'lessons learned' process, in the context of the outcome negotiations between the Ministry of Culture and the Agency, and in the Ministry's financial statements concerning accounting units and, if necessary, in separate meetings between the Ministry and the Agency. In its annual report to the Ministry of Culture, the agency reports on 'lessons learned' related to the achievement of the above objectives, including concrete actions, the budget allocation in its financial statements, and submits its current plans to the Ministry by the end of February each year.

ANNEXES

Social impact

	2019 (estimate)	2020 (target)	2021 (target)	2022 (target)	2023 (target)
<p>Objective 1. The Academy of Finland promotes high-quality, responsible and influential research and fosters scientific development and the utilization of research and the resulting know-how</p> <ul style="list-style-type: none"> Indicator: Top 10 publications of Academy-funded researchers - index (academy projects and academy researchers). 	1.30	1.30	1.40	1.40	1.40
<p>Objective 2. The Academy works actively with key stakeholders in research, education and innovation to improve quality and effectiveness</p> <ul style="list-style-type: none"> Indicator: Academy's ability to Collaborate, key partners' views (every other stakeholder survey year, max 5) Indicator: Number of meetings between the Academy and stakeholders Indicator: (descriptive) The Academy regularly produces materials and analyzes of the research activities of Universities and research Institutes and long-term monitoring of the level of research in the disciplines, examining the effectiveness of research and science policy to support decision-making. 	<ul style="list-style-type: none"> N/A 300-350 	<ul style="list-style-type: none"> 3.10 300-350 	<ul style="list-style-type: none"> N/A 300-350 	<ul style="list-style-type: none"> 3.10 300-350 	<ul style="list-style-type: none"> N/A 300-350
<p>Objective 3. Internationalisation and international cooperation is part of supporting high-quality research and of the Academy's activities.</p> <ul style="list-style-type: none"> Indicator: the share of funding targeted to promote internationalization in the total volume of funding of the Academy. (%). Indicator: The share of foreign experts in the September proposal appraisals (postdoctoral researchers, academics, academy projects) (% of total experts) 	<ul style="list-style-type: none"> 30% 95% 	<ul style="list-style-type: none"> 30% 95% 	<ul style="list-style-type: none"> 30% 95% 	<ul style="list-style-type: none"> 30% 95% 	<ul style="list-style-type: none"> 30% 95%
<p>Objective 4. The Academy promotes the availability of research materials and methods as well as research results in accordance with the principles of open science</p> <ul style="list-style-type: none"> Indicator: the relative share of academy projects that have opened their research data FAIR-based in total academy projects (will not be introduced until 2021). Indicator: Academy-funded, openly accessible peer-reviewed publications as share of all of the Academy's funded peer-reviewed publications. (%). 	<ul style="list-style-type: none"> N/A 50% 	<ul style="list-style-type: none"> N/A 80% 	<ul style="list-style-type: none"> N/A 85% 	<ul style="list-style-type: none"> N/A 90% 	<ul style="list-style-type: none"> N/A 90%
<p>Objective 5. The Academy of Finland promotes equality and non-discrimination in science and the goals of sustainable development</p>	<ul style="list-style-type: none"> 30% 	<ul style="list-style-type: none"> 35% 	<ul style="list-style-type: none"> 40% 	<ul style="list-style-type: none"> 45% 	<ul style="list-style-type: none"> 50%

	2019 (estimate)	2020 (target)	2021 (target)	2022 (target)	2023 (target)
<ul style="list-style-type: none"> Indicator: Proportion of women (%) of evaluation experts Indicator: Proportion of women (%) of applicants (academy projects, academics, postdoctoral researchers, academy programs, STN funding). 	• 37%	• 38%	• 39%	• 40%	• 41%

Operational performance

Objective/Measure	Indicators	
Performance and public good	Indicator 1. Financial activities, number of applications processed (number) Indicator 2. Financial activities, number of projects (number)	Targets set for 2020-2023
Productivity and economy	Indicator 3. Application processing time (academy projects, weeks) Indicator 4. Applications processed in relation to human resources (number / total) Indicator 5: Application processing for Academy projects (EUR / application) Indicator 6. Proportion of financial operating costs granted of funding (%)	
Service capacity and quality	Indicator 7. Customer Satisfaction (min 1-max 4) from stakeholder survey (every other year) Indicator 8: Number of Ask and apply events	

Resource Management / Group Objectives

Data and targets on HR management, including staff employment, job satisfaction, training days, equality and non-discrimination perception among staff, digitisation indicator

Resource management / Summary table of mandates and appropriations

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