

Serving European Science

Response of EIROforum to the EC Green Paper “From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding”

May 2011

Europe's Intergovernmental Research Organisations

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The history of science and technology shows that research based on excellence and addressing cutting edge issues leads to innovation through a process in which many different projects, including high-risk research, converge through proof-of-concept to application. It is important to recognise that innovation is a multi-phase process and that the discoveries that lie at the origins of innovation are not predictable.

The EIROforum organisations, as internationally recognised centres of excellence, wish to make the following main points in response to the European Commission Green Paper **From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding COM(2011) 48**.

- Basic and applied research are both drivers of innovation and should be supported on equal footing under the next Framework Programme. Suitable instruments for enhancing their synergies in order to speed-up the innovation cycle should be developed, allowing also for active involvement of European industry and SMEs in particular.
- There is a pressing need for radical simplification of the rules for participation to the Framework Programme. EIROforum proposes harmonisation of rules across different programmes, together with simpler and lighter trust-based reporting and auditing; refraining from changing rules during the course of a programme and; consistent interpretation of the rules.
- Training and mobility are fundamental to the transfer of knowledge across academia, research infrastructures and industry. This requires adequate EU funding for the Marie Curie scheme, and an equivalent scheme that includes engineers, technicians, project managers and administrators;
- Common Strategic Framework funding for research infrastructures should focus on provision of access to facilities, support for the preparation of upgrades and enhancements, and for facilities of true European dimension (e.g. GEANT, GRID and other e-infrastructures). The EU should also allow its Member States, if they so choose, to use structural funds to facilitate their involvement in major European level research infrastructures;
- The rules for management of Intellectual Property Rights under the next Framework Programme should be balanced and take into account the mission and legitimate interests of both the public research institutes and the participating industrial partners. Clear and streamlined rules for IP and access rights may be achieved through mandatory Consortium Agreement templates, with few options, which may depend on the type of project and the phase of the innovation cycle and should be made available to the participants in advance;
- The intergovernmental research organisations should continue to be eligible for participation in the next Framework Programme, and the specific provisions that facilitated their participation should be maintained.

1st Set of Questions: Working together to deliver on Europe 2020

Question 1

How should the Common Strategic Framework make EU research and innovation funding more attractive and easy to access for participants? What is needed in addition to a single entry point with common IT tools, a one stop shop for support, a streamlined set of funding instruments covering the full innovation chain and further steps towards administrative simplification?

EIROforum position

EIROforum welcomes efforts by the European Commission to streamline EU funding for research (FP, CIP, EIT, Structural Funds) and reorganise its support for European research within a clear conceptual framework and a simplified architecture. In addition to the improvements suggested in the Green Paper to make EU funding schemes more attractive and easy to access, EIROforum stresses the need to take the following into account:

- 1) Given the importance and level of EU funding for European Research, the preparation of the related Work programmes should involve the scientific community and Calls for participation should match the needs of the relevant scientific communities in regards to scope and timing;
- 2) The overall concept of the European Research Area (ERA) should remain the basic framework within which EU research funding should be seen and deployed. This means that consideration must be given to how EU funding can best support the further development of the ERA and interact with/complement national funding. Only an integrated view, as provided by the ERA, can ensure optimisation of resources and results;
- 3) The time from Call to contract placement should be reduced and administrative simplification should be vigorously pursued at all stages of the Framework Programme.

Question 2

How should EU funding best cover the full innovation cycle from research to market uptake?

EIROforum position

Research is the DNA of innovation. Like the double helix of DNA, basic and targeted research are essential dual components of a knowledge-based economy, spawning continuous growth.

The effective use of EU funds to cover the full innovation cycle must include support for the interfaces between the various actors in the innovation system. These interfaces constitute structural links between publicly-funded research and innovation, and, inter alia, comprise:

- 1) Within FP8, the Marie Curie scheme should be strengthened and expanded, including 1) Direct interaction between the research organisations and industry, when relevant industry-based research is conducted at publicly-funded research

facilities; through the development of enabling technologies (such as superconductor technology, materials to be used in extreme conditions or with unique properties, high-power computing, remote handling, drug development etc.); and through direct procurement by the research organisations of high-tech products for scientific use, including active engagement by the research organisation in the necessary R&D (e.g. detector development);

- 2) Transfer of know-how through dedicated Technology Transfer/Knowledge Exchange activities that receive targeted funding;
- 3) Training of scientists and engineers, thus strengthening the European hightech workforce; and
- 4) Geographical and sectoral mobility of S&T personnel (including engineers and managerial staff) at all career levels to facilitate knowledge transfer and training.

Thus, EU funding is essential for strengthening these structural links between basic research and innovation. Furthermore, the innovative proof-of-concept funding now introduced by the European Research Council (ERC) should be extended to all areas of the Framework Programme (see answer to Question 21).

In developing effective EU funding for research, it should be recognised that different phases of the innovation cycle pose different challenges and have specific requirements in terms of funding intensity, timescales, the treatment of Intellectual Property Rights (IPR), etc.

Question 3

What are the characteristics of EU funding that maximise the benefit of acting at the EU level? Should there be a strong emphasis on leveraging other sources of funding?

EIROforum position

The EIROforum partner organisations are all European-level organisations, the establishment and funding of which reflect the subsidiarity principle. EIROforum believes that with members states and industry providing the main funding for European research, EU funding should focus on support for:

- 1) Large infrastructures used by a wide range of researchers/research organisations (including e-infrastructures);
- 2) Focussed networking at all levels to promote research and innovation with a European-added value; and
- 3) Trans-national access to research infrastructures which has already begun to open national research infrastructures to participation from other countries, thus contributing to the functioning of the ERA.

EU funding that leverages other funding sources should remain an option, but the advantages (possibly larger amounts of funding) must clearly exceed the disadvantages

(greater complexity, governance, financial management). While recognising the legitimacy of pursuing wider policy goals, research funding should first and foremost be directed at serving the primary purpose of supporting research projects on the basis of excellence.

Question 4

*How should EU research and innovation funding best be used to pool Member States resources?
How should Joint Programming Initiatives between groups of Member States be supported?*

EIROforum position

The EIROforum partner organisations are long-standing, highly successful examples of efficient joint programming and what can be achieved with the appropriate commitment by the member states. The EIROforum partner organisations constitute a working model for joint programming in which their member states pool resources to carry out a research programme that is driven by scientific excellence. Member states and the EU should build on that experience in facilitating joint programming in other important areas of research by introducing flexible instruments that allow the application of similar principles and the execution of programmes that involve several research organisations in different countries.

Question 5

What should be the balance between smaller, targeted projects and larger, strategic ones?

EIROforum position

The size of a research project depends on its purpose, the scientific and technology area, and other factors. From a scientific point of view, it is not advisable to set a specific balance between different types of projects. Thus, a variety of projects, in terms of size and scope, have to be allowed for, provided that they conform to the general principles for EU funding (as proposed under the answer to Question 3).

Question 6

How could the Commission ensure the balance between a unique set of rules allowing for radical simplification and the necessity to keep a certain degree of flexibility and diversity to achieve objectives of different instruments, and respond to the needs of different beneficiaries, in particular SMEs?

EIROforum position

EIROforum agrees with the Commission that there is a pressing need for radical simplification and reduction of bureaucratic overhead.

Rules should be established prior to the launch of the programme. They should be clear, transparent and well-founded and should provide for sufficient flexibility without over-complication. They should be harmonised across different programmes. Full account should be taken of good practice solutions from non-EU research funding institutions.

Templates for consortium agreements should be provided that take proper account of the attribution of IPR among project partners (this could be achieved with 3-4 model agreements for partners to choose from, or with a menu of standard clauses that enable some flexibility while retaining the essential features across all agreements).

The requirements for reporting and auditing practices should be reduced. Financial audits should focus on the major expenditure items and, in any case where cofunding is involved, be limited to the contribution of the EC.

Consistency in interpretation and application of the rules is essential; this would be facilitated by a single entry point to a sole set of authoritative answers to questions. This would help build confidence among the scientific community.

The EIROforum partner organisations wish to emphasise the fact that scientific research involves a certain degree of risk and the practice of science involves a high degree of trust. Funding rules and grant agreements should recognise these and allow scientists to focus on their research as much as possible. In this context, EIROforum welcomes the idea to implement Lump Sum grant agreements whenever possible and apply the 'high-trust award' approach¹.

Question 7

What should be the measures of success for EU research and innovation funding? Which performance indicators could be used?

EIROforum position

At a general level, performance-measuring systems may refer to the key aims of the EU 2020 Vision, but below this level, only sets of objectives and indicators specific to the research area and recognised as providing real insight should be used.

Caution should be exercised in setting performance indicators to ensure that they bring added-value and do not become an objective themselves. It is essential that performance indicators and their end-use should be established well in advance of the commencement of the activity, and should not be retro-fitted;

Research results are valuable to a range of stakeholders including the scientific community, the economy, policy-makers and society at large. As a result the overall impact is very difficult to assess in the short term and will vary according to the context in which the research results are used. An objective measure of the value of research and a purely output-based assessment of research is not necessarily meaningful.

The independent assessment of the Framework Programme itself should be extended to cover the individual sub-programmes.

Question 8

How should EU research and innovation funding relate to regional and national funding? How should this funding complement funds from the future Cohesion policy, designed to help the less developed regions of the EU, and the rural development programmes?

1. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Simplifying the Implementation of the Research Framework Programme, COM(2010) 187

EIROforum position

EU, national and other funding streams must complement, and not replace, each other and need to be coordinated as far as possible to exploit potential synergies. This applies also to the support of high-risk, truly innovative projects.

Structural funds earmarked for Research, Development and Innovation (R, D &I) investments in the convergence regions need to be exploited fully for their intended purpose. Structural funds should also be used to allow member states to participate in scientific co-operations beyond their own national borders to raise scientific standards and/or contribute to capacity building. This may, for example, mean enabling industry in a convergence region to build advanced equipment for a research facility elsewhere.

2nd Set of Questions: Tackling Societal Challenges

Question 9

How should a stronger focus on societal challenges affect the balance between curiosity-driven research and agenda-driven activities?

EIROforum position

Agenda-driven and curiosity-driven research activities co-exist and curiosity-driven research is as important as agenda-driven research. Past experience shows that problems are frequently solved by research that is not agenda-driven. In fact, most of the technologies that form an essential part of our daily lives and underpin our material wealth, physical wellbeing and safety originate from curiosity-driven research carried out decades ago. Also, on the short timescale there is a strong inter-dependence between targeted, agenda-driven activities and curiosity-driven research. First, the societal Grand Challenges cannot be addressed without basic research. Given the serendipitous nature of science, narrowing the scope of research may even reduce capacities for addressing these challenges. Second, focussing too much on these challenges at the expense of curiosity-driven research risks undermining progress in areas, possibly not even recognised today, that may turn out to be very important in the future. It may thus have serious long-term consequences for Europe's innovation capacity and for attracting the best scientists and engineers.

Question 10

Should there be more room for bottom-up activities?

EIROforum position

Following on from the answer to Question 9, EIROforum would welcome more room for bottom-up activities and draws attention to specific issues of governance and resources that should be addressed.

First, there is a clear requirement to involve the scientific community in the governance of a programme that supports bottom-up scientific activities (see also the answer to Question 1).

Second, adequate funding is needed for bottom-up research to ensure that scientists can carry out research in new high-risk areas that could be the foundry for revolutionary new developments, thereby strengthening European competitiveness and producing a significant impact on society in the longer term.

There has been an attempt in FP6 to support bottom-up research in the context of NEST². EIROforum would welcome extending this to cover all of the Strategic Framework Programme.

This is addressed further in the answer to Question 21).

Question 13

How could EU research and innovation activities attract greater interest and involvement of citizens and civil society?

EIROforum position

Science and society activities of the Strategic Framework Programme should build on the solid body of experience accumulated over the last decades (not least thanks to FP supported pilot projects carried out by national actors as well as by the EIROforum organisations). Such activities should be strengthened significantly to form a coherent and sustainable programme with a clear European dimension.

Academia, industry, education and the research communities should work together to increase the visibility of science, raise science literacy and engage citizens in Europe. This requires the full range of science and society issues to be addressed, including public understanding of science, science teaching, gender issues and ethics. It should target, among others, school pupils, students, science teachers and the general public as a whole.

Science and society activities of the required European scale and impact, as well as their coordination, can only be successful with adequate financial support provided by the Strategic Framework Programme. Care should be taken to ensure that successful activities are sustained on the long term, recognising that these activities require ongoing commitments.

3rd Set of Questions: Strengthening Competitiveness

Question 16

How and what types of Small and Medium-sized Enterprises (SME) should be supported at EU level; how should this complement national and regional level schemes? What kind of measures should be taken to decisively facilitate the participation of SMEs in EU research and innovation programmes?

EIROforum position

To facilitate the participation of SMEs in EU research and innovation programmes, it is essential that financial barriers are lowered and the administrative burdens eased.

Experience from previous Framework Programmes shows that a considerable number of small, high-tech companies and academic collaborators in certain programmes, that may be interested in participating, drop out when faced with the requirement of matching contributions. Such enterprises tend to be at a stage in their evolution when resources are extremely tightly constrained and speculative expenditure is a luxury that few can afford.

Question 20

How should intellectual property rules governing EU funding strike the right balance between competitiveness aspects and the need for access to and dissemination of scientific results?

EIROforum position

EIROforum endorses open access to research results obtained with public funding and in line with the relevant programme access policies.

The right balance between IPR protection and open access depends on the level of industry involvement and the right of academic partners to retain the Intellectual Property produced by them. In situations where the results could be of a sensitive nature or a potentially commercial value, consideration should be given to the use of embargos, to include a (reasonable) delay in the release of results into the public domain.

In the case of collaborative projects involving industry and academic researchers, without prejudice to legitimate industry interests care must be taken not to discourage participation by academic researchers due to disadvantageously biased IPR.

In addition, providing physical access to scientific results entails a real cost. Processing, cataloguing, archiving and disseminating data, for example, require resources that need to be covered by, for example, the EU.

4th Set of Questions: Strengthening Europe's science base and the European Research Area**Question 21**

How should the role of the European Research Council be strengthened in supporting world-class excellence?

EIROforum position

The ERC should remain excellence-based, become fully independent and be well funded. At the same time, ERC funding must not be a substitute for national funding in support of excellence.

The bottom-up approach for competitive funding ensures excellence and serves to attract and retain outstanding researchers in Europe. However, in some scientific fields bottom-up research requires large international teams that are not eligible for ERC funding and thus, scientific excellence in these areas is not funded by the EU. This should be changed by introducing an additional funding stream within the ERC or in another part of the EU programme.

Furthermore, the proof-of-concept fund, currently managed by the ERC for investigator-driven research, should be increased and expanded to be broadly accessible by all parts of the Strategic Framework Programme. Given the nature of this particular action and the suggestion to introduce this more widely, the ERC should not host such a fund.

Question 22

How should EU support assist Member States in building up excellence?

EIROforum position

Research and innovation capacity building in support of excellence in the EU, in general, and in the convergence regions in particular, should be supported by EU funding. This should also involve a more targeted use of structural funds in coordination with other support mechanisms for research.

Research infrastructures, including distributed facilities, can offer unique opportunities to regions, but care must be taken not to compromise their research capabilities by politically-driven choice of locations. Excellence must be the principal criterion for Pan-European research infrastructures.

The EU should allow member states, if they so choose, to use structural funds to facilitate their involvement in the major European-level research infrastructures on a transitional basis.

Question 23

How should the role of Marie Curie Actions be strengthened in promoting researcher mobility and developing attractive careers?

EIROforum position

The demonstrable success of Marie-Curie COFUND and International Research Staff Exchange Scheme (IRSES), introduced in FP7, should be built upon. A substantial increase in budget for host-driven actions, and a greater emphasis on including engineers, technicians and research administrators at every career level, would be justified, given their positive impact on strengthening international cooperation within and beyond the ERA, and their structuring effect on scientific disciplines. The importance to the overall strength and eminence of the ERA of excellence in these underpinning disciplines needs to be recognised through increased support to parallel that offered to scientists.

EU funding should be extended to cover sustained, coherent, comprehensive and rapidly implemented schemes, with a clear European dimension, to attract and support entrants to scientific, technical and engineering careers.

Question 24

What actions should be taken at EU level to further strengthen the role of women in science and innovation?

EIROforum position

To help address the 'leaky pipe' of mid-career female researchers dropping out of the system, the EC should support specific scholarships for women such as, for example, career re-entry schemes after a family break. The EC might also consider a scheme to support young female researchers in setting up their own working group/laboratory.

Going beyond this, carefully targeted EC support for institutions – for example, for the implementation of programmes to provide training across the workforce in recognising and countering both conscious and unconscious discrimination – could make a substantial contribution to addressing the issues of cultural, educational and working environments that inhibit the progress of women, in particular in science and engineering.

Question 25

How should research infrastructures (including EU-wide e-Infrastructures) be supported at EU level?

EIROforum position

EIROforum considers that the main thrust of EU support for research infrastructures should be in the field of helping to develop facilities and/or services that can be used by a wide range of scientific communities and disciplines. For example, the Strategic Framework Programme should provide increased support for the development of:

- 1) Integrating activities, bringing together whole scientific communities which use RIs of similar type in support of major projects (e.g. in technology development of scientific instrumentation for large scientific infrastructures, staff training, networking and international cooperation);
- 2) Enhanced transnational user access;
- 3) Support for the preparation of major upgrade programmes of existing large infrastructures, as well as design studies and preparatory phase of new Research Infrastructures of pan-European interest;
- 4) Distributed computing infrastructures, such as GEANT, GRID and Clouds, and supercomputing centres;
- 5) ICT tools for storage, processing, archiving, curation and usage of very large data sets;
- 6) E-infrastructure that can be used by scientific and industrial communities to interface archived research data with scientific publications;

Question 26

How should international cooperation with non-EU countries be supported e.g. in terms of priority areas of strategic interest, instruments, reciprocity (including on IPR aspects) or cooperation with Member States?

EIROforum position

International competition strengthens scientific effort and cooperation brings clear and significant benefits, creating a broader user base, opening opportunities for sharing ideas, developing joint initiatives and reducing duplication.

The Strategic Framework Programme should expand its support for cooperation between European research organisations and research organisations in countries of scientific interest and secure mutual benefit on the basis of reciprocity. This could involve the exchange of staff, joint technology development, and training.

Such cooperation with highly developed regions should be extended also to support capacity building in developing countries.

Thus, the Strategic Framework Programme should not only comprise Coordination and Support actions, as in FP7, but also extend the instruments under the INCO activities to research and capacity building projects, including training activities, for developing countries.

Question 27

Which key issues and obstacles concerning the ERA should EU funding instruments seek to overcome, and which should be addressed by other (e.g. legislative) measures?

EIROforum position

The success of the next EU research funding programme in terms of delivering real added value to European society will depend not only on its budget, composition and priorities but also on the ability of Europe to undertake legislative, regulatory and public procurement actions in an integrated approach to research, technology development and innovation, as indeed implied in the Innovation Union.

Legislative measures could include: a Pan-European Pension Scheme for Researchers, the development of a 'career path system' for European Researchers (that fosters trans-national mobility as well as trans-sectoral mobility), an improved and integrated IPR management system (including a single European patent), possible review of state-aid rules for R&D intensive SMEs, the further re-direction of structural funds towards dedicated support for R&D&I, better and easier access for third-country S&T personnel and students to the ERA. Especially as regards access for third-country researchers, the restrictions associated with the current Blue Card are counter-productive to the aim of attracting talent to the EU.

Additional issues not covered by the Green Paper

1. Conditions for participation of International European Interest Organisations

The current FP7 rules concerning the participation of International European Interest Organisations (such as the members of EIROforum) should be extended and applied on the same basis to all parts of the Strategic Framework Programme.

2. Special clause for international organisations

The special clause no. 2 applicable to FP7 Grant Agreements, which governs some specific conditions for participation of international organisations, should continue to be used under the Strategic Framework Programme.

3. Grant queries

Further to the introduction of a choice of standardised mandatory consortium agreements, a FAQ-service should be introduced regarding the interpretation of the Grant Agreement and its Annexes, as well as the content of the Consortium Agreements. This service should also bind the EC, so as to avoid conflicting interpretations between EC project officers from different units, Directorates and Directorates General of the Commission regarding the IP and access rights in EU projects.

