



European Life Sciences Forum

Meeting **Life Sciences in the
European Research Council**

The scientists' opinion

Background document

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The possibility that a European Research Council (ERC) should be established has recently generated a lot of discussion. Although many scientists have promoted the concept in the past, it is significant that those responsible for science policy in Europe have also turned their attention to this topic in the last 2-3 years. The reintroduction of the concept of a European Research Area by the EC Commissioner of Research, Mr. Busquin, at the start of his period in office reflected a further stage of development of Europe as a unit rather than a composite of nation states. Events external to research, but particularly the symbolism associated with the introduction of the Euro and the increased freedom of movement of people and goods throughout Europe, have led to a reassessment of the impact that europeanization should have on scientific research. This reflection takes place at a time when the European Framework Programmes already exist as part of the fabric of European research instruments. Taken together with the national programmes and with the input from some international organizations, foundations and charities, one might have thought that the menu for funding was sufficiently diverse and complete. But the distinction is being increasingly made between the 15+1 model (i.e. where there are 15 national programmes and 1 European programme) and a truly unified, and indeed integrated, European research operation. The extent to which one or the other model is best suited for today's needs is a topic with much broader consequences for Europe and will not be pursued in this document other than to note that the consequences of various treaties entered into by the member states of the EU slowly find practical expression in all facets of our lives.

There are diverse start-points to the discussion on the possibility of establishing a European Research Council. Common to all is the realization that the European scientific enterprise, whether seen from a national or from a community perspective, must do better. The statistics point to a high quantitative scientific output (as scored by the total number of publications) but at a relatively low quality level (as measured by the percentage of papers in high impact journals). This is indirectly reflected in the sporadic but consistent move of the research activities of major companies from their traditional home bases in Europe to the USA. Although the reasons for such movements are multiple and complex, they do not send a signal of satisfaction with the local scientific environment or skill-base. Some national programmes are indeed excellent, but in other countries there are difficulties in providing high quality scientifically based selection processes. The Framework Programmes themselves

are a frequent target for criticism based on aspects as diverse as their complexity, the imbalance between administrative effort and support provided, the selection process, the lack of transparency, the constant changing of instruments, or the exclusion of certain topics. This document will not focus on any of these aspects other than to indicate that the legal context for the Framework Programmes includes constraints that result in the support given being based on achieving economic and social goals. This explains the difficulty in providing unrestricted support for fundamental scientific research through the Framework Programmes.

A further point of concern is the fall-off in enthusiasm by students to enter into a career in research or indeed in any aspect of science. Once more, there are complex social and economic aspects that under-pin this trend but it points to a need to make the career of a scientist one that is intellectually stimulating and rewarding. Perhaps related to this is the fact that science in the USA, in particular, seems to be better, not only in terms of output but also in the support, both financial and in terms of apparent appreciation of the scientists from the governmental agencies. This results in scientists from all over the world, including of course many from Europe, transferring their skills and intelligence to that community.

Reflections such as these find their way into many official documents, including those from the European Commission, but an added stimulus to the debate on "what should be done?" came from the pronouncement from the heads of the Member States of the European Union in Lisbon in 2000 that their aim was to make Europe the world's major knowledge-based economy by 2010. This conclusion derives from the profound economic realization that if such goal is not reached, then an inability to develop the new products and industries of the future, coupled with a projected move of robust manufacturing processes to less expensive environments, will be catastrophic for Europe. The follow-up decision by the heads of state in Barcelona that funding for Research and Development should increase from 1.9% to approach 3% within the same time scale suggests a strong and inevitable link between the knowledge, the economy and the scientific base on which it will be built... more knowledge, more invention, more innovation, more intellectual capital, more skilled researchers and support staff will be the essential ingredients of success in the future.

When the research support systems were re-examined in the light of these political and practical considerations, analysts started to voice again the possibility of giving fresh consideration to the concept of a European Research Council. In doing so it became clear from multiple meetings and discussions on the topic that something close to a consensus existed on the characteristics that this entity should have. These have been elaborated upon recently in the document that summarized a meeting organized by the Danish Presidency of the EU in October (<http://www.forsk.dk/eng/eupresidency/index.htm>) and would appear to be that:

- (i) The Council should cover all areas of science;
- (ii) The Council should support high quality basic research;
- (iii) Decisions should be based on quality alone without consideration of the concept of a *juste retour*;
- (iv) The Council should be a funding body without an advisory role;
- (v) The Council should have a high level of support from the scientific community.

Of course not all are in agreement that an ERC is needed (and here the example of the Euro is also appropriate), but it would appear that there is a momentum behind the concept of establishing an ERC on the basis laid out above. An increasing number of scientists and administrators feel that a refocusing of attention and funding on investigator-driven research is both necessary and timely. The increased competition, on an international scale, for funding based on truly quality criteria would be a stimulus for many and reinvigorate science throughout the EU. If the research supported was particularly challenging and novel and was of a sophistication that required the best available talents, then the spin-off, in terms of patents and products, would form the basis for future economies. One challenge that has been identified is that the outcome should diminish rather than increase fragmentation...if the result is best described as 15+2 (or 25+2 after enlargement) then at least one political goal will not have been achieved. Another challenge is to get all political, industrial and social parties engaged in supporting the ERC but to do so in a hands-off manner that will allow the research to achieve its own goals.

Arising from these considerations some overall directions can be established but many very practical questions remain to be addressed. The meeting in Paris on 19th February 2003, involving many of active scientists, is an opportunity for the

community that is central to the research council to have input into the discussion. This background document raises some questions below that could be among those that this meeting will address (although it is recognized that the core assumption of the document is that it is timely to form an ERC which may be a topic for discussion for some). Included in these questions are the following:

- Are the characteristics of an ERC that have been summarized above appropriate? Are other elements needed? Should some be excluded? For instance, should review by expert scientists be the basis for funding or should other criteria be included? Should there be any restrictions on eligible applications? Should there be an obligatory trans-national aspect? Will the absence of a *juste retour* exclude communities of scientists?
- How can the ERC promote the integration of research in Europe and avoid increasing fragmentation? Will communication and collaboration be sufficient or will some communally accepted research targets be needed to allow for effective integration of efforts?
- Which programmes will be needed? Where are the gaps in current funding? Should the ERC provide research grants, or fellowships, or support for newly independent scientists, or provide training courses or other activities or all of the above? If research grants are a core component of the programme, what level of funding should be given and for what length of time? Should the ERC have a role in infrastructure delivery?
- Should there be one ERC, a single ERC with different sections delivering the programme to different sectors of research, or several independent ERCs focusing on different scientific sectors?
- Who should found the ERC and what should the relationship be between the founder(s) and this new body? A role for the EU is mandated by the Maastricht and other treaties, but should it be founded only by the EU or in conjunction with national research councils acting individually or collectively through the European Science Foundation? What should be the role of existing intergovernmental bodies such as EMBO/EMBC in its establishment?
- Should there be a "Big-Bang" start where all aspects of the ERC are in place at the start or should there be a planned build-up of different components, for instance the Euro Young Investigators programme that has been proposed by the EUROHORCS acting through the ESF, or through the proposed

expanded EMBC/EMBO programme that would include research grants in addition to its established activities?

- What level of funding should the ERC receive annually? For comparative purposes: the current Framework Programme has an annual budget of more than 4 billion EURO. This corresponds to approximately 4% of the combined national R&D expenditure of the EU member states. The annual budget of the NIH in the USA is approximately 27 billion EURO. The budget of EMBC/EMBO is currently approximately 15 million EURO, that of EMBL approximately 90 million EURO and that of CERN approximately 700 million EURO.
- How should the ERC be funded? It is to be presumed that it is absolutely necessary that both the framework and the national research council programmes will be continued as they address different aspects of the support needed for research. But some funds could come from the 7th Framework Programme. New money, perhaps from increased spending as envisaged by the Barcelona statement, will be needed if support from national research councils and scientists that depend on them is to be retained. Will industry see it as an essential component of its future needs and provide funding accordingly on an arm's length basis? Will foundations provide some financial support?
- How should it be managed? For instance, how should the balance be achieved between openness of calls for proposals and an unmanageable number of applications? Can light administration deliver the programme in a way that avoids abuses of expenditure of public money?

Discussion on all these topics by interested parties is timely. The outcome is unclear at present but many aspects remain to be fixed. It is hoped that those with opinions will participate actively in the Paris meeting.

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