The European Science Foundation (ESF) is committed to driving progress in research and innovation via high quality science, and it therefore provides the European research community with services such as peer review and evaluation, as well as support to career tracking. The ESF also collaborates internationally on research programmes, which it co-ordinates in almost every scientific domain, while it also hosts high-level expert boards and committees to support researchers in achieving their objectives.

SciTech Europa Quarterly spoke to the ESF’s chief executive, Dr Jean Claude Worms, about the changing R&D&I landscape in Europe today and how the European Science Foundation continues to play a role in fostering innovative advances.

Perhaps I could begin by asking how you would characterise the European R&D&I landscape today? Where do you feel the biggest hurdles - and indeed the most significant areas of potential - lie?

Of course, the European Science Foundation no longer deals with research policy per se; we are essentially now here to provide research stakeholders, both public and private, with services they can use to guide their decision making.

That being said, as a part of the European research landscape we have our own views on the situation and this is perhaps characterised by a perceived lack of a large-scale cross-border collaborative research funding instrument. This is something that we had in the past and which cost the taxpayer relatively little in terms of budget (perhaps a few tens of millions a year, which in context is not massive and which, indeed, was used to generate or leverage research funding from national sources which enabled researchers to co-ordinate and collaborate across the various countries both within and beyond the EU).

It is possible to argue that other instruments exist in Europe, such as COST and, of course, Horizon 2020 and the Framework Programmes generally, but they also existed in the past alongside the large-scale cross-border collaborative research funding instrument which has now disappeared.

The reality is essentially that a consolidation in European funding instruments has resulted in a net deficit in such funding by several tens of millions of euro, and that this was being used to leverage in turn hundreds of millions at the national level. This is an important issue, and one that has been characterised by both ourselves and others.

In addition, the objectives laid out in the Lisbon Treaty are not being fulfilled in terms of funding (a couple of countries may be meeting them, but most are not). I therefore believe that Europe is simply not spending enough on R&D&I, certainly not at the level envisaged over a decade ago.

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Connecting science

Dr Jean Claude Worms, chief executive of the European Science Foundation (ESF) spoke to SciTech Europa Quarterly about the changing R&D&I landscape in Europe today, from funding to the European Research Area (ERA), and how the ESF continues to play a role in fostering innovative advances.
Furthermore, there is now a distinct sense that the various research organisations at national level have folded back upon themselves meaning that rather than progress towards more integration in Europe there is now a collection of different national policies.

**What effect, then, is this having on the European Research Area, which is now a legal entity?**

In order to have something that would truly make sense we would need a European policy on research that is agreed by all partners. The reality, however, is that we have almost as many different policies as there are member states, with the possible exception of the EC Framework Programme.

Regarding the evolution of the Framework Programmes, various things have been discussed about their future, and it is still not clear what it will look like moving forwards. Many user surveys and discussions have been carried out and, of course, Pascal Lamy’s High-Level Group’s report helps to provide some direction, although it is difficult to see whether the Union will follow that or not.

One of the difficulties in the Framework Programme is its relative lack of long term sustainability. That is, a project is funded for (typically) three years, and then another takes its place and they are not necessarily connected. This has the advantage of supporting creativity and innovation by sponsoring bottom-up research, but on the other there are many areas that require longer term support, and they therefore suffer from a lack of long-term vision.

The commission is fully aware of this, but there are also other views on this issue too, so what will happen remains unclear. But from a personal point of view, I would like to see FP9 emerge with a better balance between bottom-up and top-down funding for some areas of research.

An additional aspect that concerns me is that the stakeholders, the taxpayers who are actually funding this research, have a legitimate desire to understand what science is for. And we must therefore find a way to judge the impact of science. However, this needs to be done with caution because when a set of indicators or metrics to judge the impact of research is being designed, the tendency is for this to be done in a very quantifiable manner by judging applications. Of course, when it comes to fundamental research such indicators are inadequate; the outcomes of basic research aren’t predictable.

Too rigid impact measurement indicators risk discouraging creativity; they could lead, for instance, to the suppression of funding in areas that would be deemed unproductive with regard to short term investments.

**The ESF is now in a position where it provides services to its clientele. Do you feel there are things that are perhaps missing at the European level (and perhaps too much bureaucracy in the Framework Programmes) which render your services even more necessary?**

The European Commission is trying hard to simplify the Framework Programmes and reduce the bureaucracy. But, of course, these are complex instruments and the projects they fund involve numerous partners. And they have to be conducted in a way that includes a solid level of financial control because they are dealing with public money. The European Science Foundation helps researchers with this, ensuring that both the complexity and the importance of financial control are well-understood.

Our expertise and experience has been developed over the past four decades and we are able to deal with issues such as research management, project management, financial reporting, HR-related issues, full transparency in the evaluation process, full accountability about the use of finance, and many other areas which were a trademark of ESF in the past (where we funded more than 2,000 programmes and networks and supported some 300,000 scientists). Our role is essentially to act as research evaluators and then as the co-ordinators of research projects.

There are two main pillars to what we do at the ESF. The first is research evaluation. Here, we conduct peer review and evaluations. Peer review involves assisting public or private research investors to evaluate grant proposals they receive – either advanced-type levels of grants, professor-types or high-level proposals with high levels of funding, or indeed post-doctorate smaller grants. The basic idea here is that these organisations – which can be national research councils, universities or private research foundations – are providing money for research through various schemes and they want to sub-contract or outsource the evaluation task in order for it to be carried out independently with sound management of conflict of interest and bias issues, as this is something that cannot always be achieved at the national level. In some cases, they also want to be relieved of the administrative hurdle of dealing with that themselves.

Regarding the evaluation of programmes, institutions, national funding schemes, national research schemes; this is an area we are now starting to address to a greater extent. When universities, for instance, are appointing a professor or another high level position such as a director of a university hospital, then we can help by using the tools we have developed for research evaluation. This essentially means assembling panels of experts who meet, complemented or not by remote evaluation, and work to reach a consensus on a variety of issues...
based on an agreed set of indicators regarding what needs to be evaluated. We have done that for a number of countries in central Europe, for instance, and have recently started to support university hospitals by helping them to identify their next director and other high level positions.

This first pillar of our activity is thus aimed at providing benchmark evaluation practices for excellent research. The other pillar deals with the management aspect. Here, once a project has been agreed on or a grant received — whether or not this is for an EU project — the issue then becomes about managing and supporting the community by relieving them of part of the administrative hurdle of managing that contract. We are a part of these projects, whether that be as a partner, a co-ordinator or project office, or as a work package holder for a specific area of expertise.

This second pillar is mainly centred on supporting researchers and SMEs regarding European Union-funded projects, but we also engage in projects funded by other entities — for instance the European Space Agency (ESA).

And, of course, there are other aspects of our activity that are no less important but which deal with a lower level of finances. For instance, we host several expert boards and committees in various fields — including space, nuclear physics, and radio astronomy — who provide advice to a number of supranational agencies, entities, the ESA council of ministers, for instance. These are high level bodies that don’t have a legal entity and so which rely on the ESF to provide that, as well as for the hosting mechanism and the management of the activity of the secretariat. But they also want to maintain their independence, and they develop their recommendations that they feel as appropriate given their bit.

Another interesting activity we are involved in concerns career tracking. We would like to see the development of a European career tracking platform because although some countries and some universities have such an instrument, many don’t, and certainly not at a consolidated level in Europe. The result is that as a continent we do not know where our PhD holders go and what kind of careers they pursue, and so we don’t know things like the balance between academia and industry.

We have therefore already conducted two projects based on surveys of PhD holders, and these have delivered some interesting results. I now hope that we can find a way to get the various stakeholders including the European Commission to support the launch of such a platform at the European level.
When it comes to the ERA, it is fundamental for various Central and Eastern European countries to build capacity in research and reinforce their integration in and contributions to the European research landscape. How can the ESF help here? And how important is the recently-announced partnership with the EuroScience associations enable this to evolve?

The type of expertise that the ESF has developed over the years is linked to being able to support countries where there is a need for this capacity building. Some of our members, for instance from Bulgaria, or others, benefit from these services and we can help them in terms of evaluating their research mechanism, the funding mechanisms, and the various aspects of the national system, as well as by supporting their search to access European and similar funds.

As a grassroots organisation, EuroScience is also trying to do something similar, so we wanted to combine our efforts and see whether we can do something more important and not duplicate our efforts.

The second reason we decided on the partnership is that EuroScience has been hosted by the ESF here in our headquarters in Strasbourg for six years, so there was something of a natural tendency to see what we could do together.

What does the future hold for the ESF?

There are essentially two priority areas for us moving forwards. The first is to reinforce this peer review pillar so that we are able to develop a broader customer base and a larger share of multiannual contracts that will provide an enhanced level of financial stability.

The ultimate goal here is to be able to position the ESF as the premier service provider in peer review in Europe, and the starting point for that will be to broadcast the fact that we have what it takes to provide excellent peer review for excellent research.

Secondly, I would like to develop the ability to act as a support platform for central and European countries to in the area of capacity building for research. Alongside this, of course, our project management activities will also continue.

Dr Jean Claude Worms
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