A plan for FP10: beyond competitiveness

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> The big change I experienced during these years was it becoming generally understood that research policy could be useful to other policies; that it could be a policy instrument. That it was not just an instrument to support science or the work of researchers.
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> Paola Testori Coggi, The European Commission 1986-2000, Memories of an institution, INT1137, p. 12.

Summary

In a previous report I explored some possibilities regarding evaluation of Horizon Europe (and a future FP10 plan) according to its possible effects on European competitiveness.

However, it is obviously the case that competitiveness was not the only goal of European S&T policy. In this second report I therefore broaden my discussion to other aspects of the policy.

Evaluation framework

The starting point for my evaluation - the original Commission proposal for Horizon Europe, dated 7 June 2018, COM(2018) 435 final, which gives the following aims for the policy (p. 1).

- Strengthen the Union's scientific and technological bases in order to help tackle the major global challenges of our time and contribute to achieving the Sustainable Development Goals.
- Boost the Union's competitiveness, including that of its industries.

- Help deliver on the Union's strategic priorities and support the development and implementation of Union policies.
- Transform excellent scientific results into innovation that have a real beneficial impact on our economy and quality of life, and create new markets with more skilled jobs [through] support [of] the whole R&I cycle in an integrated manner.

These points logically derive from the wording of Article 179 of the TFEU and we could say, overall, we have some succinct aims which we could gauge the program against. (The Commission's proposals for monitoring criteria were oddly different from these stated aims, citing SWD(2018) 307 final, p. 64, but we will not go into that phenomenon here.)

The reflection allows us to ascertain whether the aims (1) proved realistic (2) how the granting body and grantees performed in delivering them and (3) how the aims were modified, sidelined, or replaced (and why). It also gives us some guidance as to how to improve performance.

Simple as it sounds, however, this kind of approach proves very difficult in practice because many analysts will insist either on critique of the aims – typically through textual exegesis of policy documents – or applying their own pre-existing frameworks.

To the contrary, my analysis lets a framework emerge and sets aside critique, at least at the beginning.

In my first report, I looked at the effects of Horizon on the EU's competitiveness. In this second report, I look at the other aims of Horizon.

Again, data are incomplete and conclusions provisional. I am not substituting for the well-funded official system that is supposed to design policy. But I shall hint at possibilities that could be followed up.

Strengthen the Union's scientific and technological bases in order to help tackle the major global challenges of our time and contribute to achieving the Sustainable Development Goals

It is a reasonable starting assumption that scientific and technological bases were indeed strengthened – an assumption that the Commission is buying units of science and research that would not have occurred without its intervention (i.e., would not have been funded by national governments, private investors or philanthropists).

It is also predicated on the assumption that funds were not dissipated through corruption, nepotism and 'pet projects'.

However, as was shown by the British and Swiss excluding themselves from Horizon, the lack of participation did not destroy scientific capacity in those countries, although it probably had more complicated and under-reported consequences.

For example, I think the Commission schemes performed better on gender balance than the national schemes, at least in the British case; furthermore, national schemes are probably more susceptible to nepotism and pet projects which implies accrual of opportunity costs over time.

Overall, therefore, we could say the Horizon funds had positive impacts on the scientific and technological bases. Measuring that effect ought to be possible.

The second aspect of that point is major global challenges and SDGs. I struggled to track down the definition of what global challenges the Commission was talking about; perhaps they are considered 'understood' but we would, I think, like to know what they had in mind specifically rather than guessing.

The closest I got was the phrase 'Investing in research and innovation at EU level will address global challenges (e.g. migration, security, climate change, health)' on p. 28 of SWD(2018) 307 final PART 2/3.

Caveats aside on such a simple methodology, using CORDIS to search for those keywords brings back the following data for projects under Horizon Europe – migration (314), security (1329), climate change (1036) and health (2353). Given the database reports a total of 11277 projects*, that would be about 50% of projects containing the global challenges keywords.

This suggests that Horizon Europe has made a notable commitment to global challenges although not an overwhelming one.

SDGs are of course more clearly defined. A similar search of CORDIS using the relevant keywords gave back 190 projects, or about 1.6% of projects - accordingly, an extremely weak commitment seemed to emerge.

An investigation of European public research activity in relation to SDGs seemed to argue that research relevant to SDGs was uneven and not effectively integrated. 'Gaps' (where research was considered to be at inadequate intensity) were identified on SDGs such as reduced inequalities, gender equality and peace, justice, and strong institutions and oceans, seas, and marine environment. This implies there is significant room for improvement but also an opportunity existed for Horizon policy to solve.

Help deliver on the Union's strategic priorities and support the development and implementation of Union policies

We skip the competitiveness point which was discussed in the first report. The next question therefore concerns support for the delivery of EU policies - this entails direct alignment with broader policy goals, as well as the delivery of science advisory services. These aspects are relatively easy to answer but require a deep dive into these topics.

Given the constant reference to strategic priorities in policy documents it seems probable that the Horizon policy was implemented with these in mind and did not go off on unrelated tangents.

On the second aspect of support for the policy development, we need to examine how the program supported science advisory services.

The Commission tried various formal means to obtain scientific advice. It does not have the staff capacity to understand all the science programs it funds but there have definitely been efforts to make the programs more visible such as through CORDIS.

The JRC, funded through Horizon, would logically form the entry point for science and expertise into the Commission but this has not been legally established. The EU specialized agencies would have their own advisory structures. The science advisory services in the European Parliament, Council, Committee of the Regions, ECB, foreign service, and so on, are very small.

Obviously the JRC already receives a framework budget. It has also made efforts again to make its work more high-profile and relevant to policy design. The question of how the framework program could support science advisory services in the wide range of other institutional contexts named would therefore be of interest in the planning of FP10.

While the budget requirement would not be large it would be an obvious field for improvement in terms of a package of measures that could interpenetrate science advisory services more thoroughly across the bureaucracies.

STOA, for example, struggled with the management of funding in the last parliamentary term. In the agencies, EU-ANSA should be reinforced, and so on.

Transform excellent scientific results into innovation that have a real beneficial impact on our economy and quality of life, and create new markets with more skilled jobs [through] support [of] the whole R&I cycle in an integrated manner

This is one of the more difficult aims to evaluate because there would probably be many ways to do so. I will just pick two, namely, mechanisms that might plausibly transform results, and integrated action across the whole R&I cycle.

Transforming the results into innovation - efforts can obviously be measured by the funding of such institutions as technology transfer offices, open science and so on, anything that promotes knowledge exchange.

This concept in a way posits a linear model of innovation. Unlike most commentators I do not use this term in a disparaging way but instead see it as an essential component of any policy that seeks to connect scientific knowledge to applications.

In regard to the second quality, integrated action, this to me suggests that we need to know more about how the Commission understands its role in making connections between R&D investments. In other words, what are the core integrating actions and who is expected to undertake them.

As far as I can judge, the core actions revolve around the Partnerships. It seems this area was discussed in ERAC in 2020, but I did not yet follow this topic up - an expert group developed ideas for assessing partnerships.

However, I think in any complete appraisal we would need to examine other kinds of ways integration occurred across programs, for example, everything from the degree to which grant recipients in the same institution, city or country, topic, etc., were aware of one another and the extent to which any shared learning would develop.

Furthermore, we might ask if the Commission officials, few in number compared to the programs they sponsor, could fully understand their portfolios, and where integration could occur within the European bureaucracy.

At the least, a taxonomy of such lower-key, spontaneous or emergent integration phenomena could inform our analysis.

Other factors in the mix

Brent and Zubaşcu (2024), in interviewing the current research commissioner, Iliana Ivanova, usefully summarized the main talking points raised by senior officials about FP10.

- The EU needs to overcome its resistance to public funding of research
- The EU's weakness in translating and commercialising its strong research outputs.
- Widening alone will not close the R&I performance gap between the EU's best and worst performers.
- Discussion on incorporating dual use research into FP10 is essential.

It is important to remember that all of these ideas are not new and indeed have a long history in EU science policy. There is without doubt profit for contemporary analysts in reading expert opinions from the past (please refer to my reading list).

The claims, for example, that the EU does not spend enough and that it is weak in commercialization are practically as old as the hills. They have to be taken with a pinch of salt because the EU is actually a lot better off than most of the planet and, if it is working in a sub-optimal way, it is not worse than any other place.

The second point is that many attempts have been made to address these alleged problems in the past. If we paid explicit attention to all these many varied efforts we would certainly be able to shape an innovative policy. This is not a utopian call but indeed one that is quite realistic and could make use of the very substantial knowledge-base of experienced staff in the Commission services.

The third point about the widening policy is obvious. You have to know what happened since 1989 to understand why.

A rational policy that considered whether the EU could concentrate R&D activity in particular geographical centers, some of them in the east, some in the west (and leave the rest to the national funding agencies) would be interesting – it is quite the expectation in some other places. However, as we also know such an honest discussion is politically impossible.

Therefore, we have expedient plasters like widening, the effects of which are not as powerful as might be hoped. This is a political conundrum that no one has yet solved.

A final, more detailed, point on the dual use. Defence and security have been a common feature of the European R&D discourse for decades. The Commission, in particular, has for many years sought to gain control of warlike R&D (see, e.g., Mawdsley, 2004, The Commission Moves into Defence Research, in: *European Security Review*). However, it has typically been blocked in its ambitions by member states.

Officials might now see another opportunity to try again somewhat familiar manoeuvres, whether these manoeuvres would work this time remains unknown.

The Commission controls the framework program which also has a large budget; logically, if it can get warlike R&D included within FP10 (at least equal to the budget mustered by others, e.g., NATO STO), then the Commission suddenly becomes a player in that particular circle.

The question is therefore not whether the EU conducts significant amounts of warlike R&D, which it already does, but whether you want the Commission involved in this R&D. The discussions about ethics or if it would draw budget away from civil science seem to be rather academic to the specific Brussels debate (although they might have salience at national levels).

A practical problem – the Commission, let alone DG RTD and its off-shoots, is not a sufficiently secretive organization, indeed, it is a rather open one – a commendable quality when you are talking about civil R&D particularly the non-competitive kind, not so much, of course, the other way.

Contracting defence R&D to anything more than a handful of carefully-vetted universities would also serve as a road to ruin were anyone crazy enough to try it - again, because these organizations are not set-up for the necessary level of secrecy.

If you are trying to control dangerous science and technology, you do not want relevant knowledge and expertise circulating where anyone could get hold of it because it would be self-defeating, i.e., it would lead to the further proliferation of the dangerous science and technology you sought to control.

In the US DOE, as one prominent institutional model for an R&D-heavy organization like the Commission, but with a ‘dual’ mandate, clear legal distinctions are made between national security labs and the more open labs.

The first two options the Commission presented in a white paper (COM(2024) 27 final) seem to want to mix civil and warlike R&D which would in my view be quite dangerous from the proliferation perspective as already discussed. The third option cited the creation of a separate instrument but not really a separate legal entity as such.

As I am implying, I think for the FP10 to get seriously involved in shaping defence R&D, it would require us to think about the building of a substantial legal and institutional

infrastructure akin to US DOE. At this juncture, the chance of that occurring appears low, so I kind of assume the proposals are not likely to become substantial.

In summary, we can say that each of the varied proposals associated with the research commissioner, Ivanova, has a chequered political history. Repeatedly doing the same thing over and over again as if it is new might not produce the desired results. Equally, the burden of deciphering how it might fit together under present conditions comes down largely to guesswork.

*Search conducted in early 2024. Number of entries in the database will likely have changed but I did not update the analysis.