



Universities Scotland position on the development of Framework Programme 9 (FP9)

Scottish higher education institutions (HEIs) highly value their partnerships with European institutions, as well as being highly valued international partners themselves. As a sector we consider the value of Framework Programmes to considerably exceed the monetary value alone and we welcome the opportunity to input to the development of Framework Programme 9 (FP9).

The added value of Framework Programmes includes:

- Facilitating cooperation with partners to share knowledge and drive research quality
- Enabling the nurturing of internationally-linked and experienced researchers at all career levels
- Having a consistent approach to funding across national boundaries without requiring academics to navigate several funding systems
- Allowing pooling of expertise (and data) to reach critical mass for research into worldwide challenges
- Creating value for individuals and teams in winning competitive funding on an EU wide scale to underline the quality of work
- Providing a long-term funding settlement to support a longer-term approach to research

We see these important considerations in the design of FP9. Framework Programmes are unique on the global stage, widely regarded and valued by the research and innovation community, so there is much to celebrate in the current Horizon 2020 approach. In looking forward to FP9 we have focussed on recommendations to build from this strong base, described under eight headings:

1. Increase the budget for FP9
2. Continue to focus on excellence
3. Invest in highly successful programmes
4. Provide support for different types of impact
5. Enable research and innovation excellence across Europe
6. Be open to the world
7. Improve diversity and inclusivity in FP9
8. Simplify further

1. Increase the budget for FP9

The economic case for public investment in research and innovation is compelling. The European Commission's own review reported the benefits of public research and innovation funding, for example:

- An increase of 10% in public R&D results in an increase of 1.7% in Total Factor Productivity which results in higher economic growth
- The economic returns to public R&D to be around 20% (i.e. a net benefit)¹

There is a strong case for public investment generally but there is also a strong case for increased funding directed to FP9. According to information for the period 2014-16, 74% of high quality proposals were not funded² which represent significant missed opportunities. The very low success rate (11.6% compared to 18.4% in FP7) risks dis-incentivising applications to Framework Programmes from the best researchers. Over EUR 60 billion of additional funds would be required to support the all the high quality proposals received³. Furthermore, low success rates increase the cost of applying with a recent estimate indicating that the costs of applying to Horizon 2020 have been 30-50% of the total value⁴. From the perspective of the value of public investment in research and innovation, alongside the clear need for adequate support across the current programme, it is clear that additional budget is needed.

We support the recommendation of Independent High Level Group that the EU budget for research and innovation doubles for FP9.⁵

The FP9 budget should also be set over a similar time frame as Framework Programmes, to support a long-term approach to research and innovation.

2. Continue to focus on excellence

European level investment in research and innovation should continue to be focussed on supporting research excellence, wherever it is found. Funding excellent research does lead to beneficial impact⁶.

The FP9 budget should continue to be allocated on the basis of excellence, identified via peer review, across the whole programme.

¹ The Economic Rationale for Public R&I Funding and its Impact, European Commission, March 2017. Available here: https://ri-links2ua.eu/object/document/326/attach/KI0117050ENN_002.pdf

² Horizon 2020 in full swing: Three years on: Key facts and figures 2014 – 2016, European Commission, December 2017. Available here:

https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/h2020_threeyearson_a4_horizontal_2018_web.pdf

³ Key findings from the Horizon 2020 interim evaluation, European Commission, 2017. Available here:

https://ec.europa.eu/research/evaluations/pdf/brochure_interim_evaluation_horizon_2020_key_findings.pdf

⁴ University funding trends, European University Association (press release), October 2016. Available here:

<http://www.eua.be/Libraries/press/university-funding-trends-eua-launches-dialogue-at-funding-forum.pdf?sfvrsn=6>

⁵ LAB – FAB – APP: Investing in the European future we want, European Commission, July 2017. Available here: http://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/hlg_2017_report.pdf

⁶ Publication patterns in research underpinning impact in REF2014, Higher Education Funding Council for England, July 2016. Available here: <http://www.hefce.ac.uk/pubs/rereports/year/2016/refimpact/>

There is an important role for social sciences and humanities in solving major societal challenges, and a need for better opportunities in FP9 for researchers in these disciplines. More work can be done to strengthen social sciences and humanities projects across FP9, including better enabling curiosity driven research, as well as contributing to challenges/missions.

More work can be done to strengthen opportunities for those working in the social sciences and arts and humanities in FP9.

3. Invest in highly successful programmes

We are very supportive of the European Research Council (ERC), with over 70% of ERC projects evaluated leading to major scientific advances or breakthroughs. This study also showed that ‘curiosity-driven research, free from any thematic constraints, benefits society at large’ with 50% of projects (at the time of evaluation) having made an impact on economy, society and policy making, with close to another 10% delivering a major impact to date⁷.

The Marie Skłodowska-Curie Actions (MSCA) are also highly valued as researcher mobility, the exchange of people and ideas, is paramount to excellent research and innovation. MSCA operates in a bottom up manner enabling collaboration between the best researchers - another strength of this funding stream. To June 2017, over 2200 researchers have come to UK organisations via MSCA⁸ which has supported the careers of talented individuals and created new links and partnerships.

The Commission should increase the budget associated with highly regarded programmes such as the European Research Council and MSCA.

4. Provide support for different types of impact

Impact from excellent research

The impact of research can be diverse, and unforeseen. It is important that FP9 has a broad view of impact, not just economic but also societal, policy, health and cultural impact.

We looked at research impact from Scottish higher education institutions (HEIs), reported to the 2014 UK Research Excellence Framework, reviewing just under 800 case studies. We found over 1300 unique pathways to impact and over 2000 beneficiaries. The links between types of research and eventual beneficiary were often surprising which indicates that research benefits are far-reaching and cross traditional boundaries.⁹ Often, impact is delivered over a relatively long time frame so it is important that a sufficiently long term approach to understanding impact is taken in FP9 – including the approach to monitoring and evaluation. While

⁷ ‘What’s the impact of ERC-funded research?’, European Research Council, Autumn 2016. Available here: <https://erc.europa.eu/sites/default/files/content/pages/pdf/ERC-Newsletter-Autumn-2016-impact.pdf>

⁸ MSCA in Numbers, European Commission website, accessed 29 February 2018. Available here: https://ec.europa.eu/research/mariecurieactions/msca-numbers_en

⁹ Research Impact in the Year of Innovation, Architecture and Design, Universities Scotland, February 2016. Available here: <https://www.universities-scotland.ac.uk/publications/research-impact-in-the-year-of-innovation-architecture-and-design/>

understandably looking to enhance and demonstrate impact it is important that the EU supports the diverse range of research impact, not focussing on economic impact alone.

There are steps the EU can take to support the impact arising from such research in FP9 – with our members highlighting support for the UK Research Councils ‘Pathways to Impact’ approach, and the UK Impact Acceleration Accounts as good models.

- **FP9 must enable diverse types of impact**
- **Bottom-up, curiosity driven research (encompassing all disciplines) does deliver impact and must be enabled across all of FP9**

Supporting innovation

Increasingly Horizon 2020 has focussed support on higher Technology Readiness Levels (TRL). We have concerns with focussing too intensely on close-to-market research or specific priorities as this could cut off new areas of inquiry, at the detriment to research and innovation in Europe. It also reinforces a linear view of research and innovation. There is a need to ensure FP9 supports the whole research and innovation ecosystem, which is not to diminish the importance of work at upper TRL levels but to emphasise the importance of a healthy ecosystem. We would caution against any increased focus on innovation funding at the detriment to research funding.

The development of the European Innovation Council could be a very positive step in streamlining support for the European innovation system, and improving connectivity to research programmes. There is a role for FP9 in supporting translational research and work at lower TRL levels to deliver innovation arising from ground-breaking research. Additional funding for proof of concept work would be valuable.

We note the discussion on grant based funding, which can be valuable for near-market innovation but are not appropriate for higher-risk, earlier stage research and innovation.

- **Funding for innovation should not come at the detriment to research**
- **An over-focus on high TRLs can be damaging due to reinforcing a linear view of research and innovation**
- **Greater support for proof of concept funding would be welcome**

Looking to a mission-orientated approach

The work on mission-orientated funding is interesting and is familiar to UK institutions given the approach of the UK Industrial Strategy. Given the strong focus for FP9 of being ‘open to the world’ it is appropriate that missions are aligned to the UN Sustainable Development Goals. These are globally relevant and are a focus worldwide.

While a focus on concrete problems in missions could be effective it is important to allow flexibility in how such goals are achieved, enabling collaborative research to contribute to missions and supporting the full spectrum of research and innovation. We do not see a role for mission-orientated research in the Excellent Science pillar or equivalent in FP9. Both social sciences and arts and humanities research have a huge role to play in such missions or challenges and experts should be engaged in developing missions to ensure these disciplines are firmly integrated in design of challenges/missions.

- **There is an important role for social sciences and humanities research in the Commission's work on mission-orientated programmes**
- **We do not see a role for mission orientated funding in the Excellent Science pillar, or equivalent for FP9.**

Demonstrating the value of research and innovation

There should be a key focus in FP9 in engaging EU citizens in the impact of research and innovation and communicating the value of the investment.

We agree with the principle of public engagement with research and innovation across the full lifecycle of projects. We do see challenges in citizen engagement as outlined in the Lamy report but very much see the importance of co-design and end user engagement in Societal Challenges / mission programmes.

Communicating the value of investment in research and innovation to citizens through the Commission, and also at national level, is important to building support and engagement.

5. Enable research and innovation excellence across Europe

The principle of funding for excellence does not negate the importance of capacity building. Increasing research excellence across Europe will increase competitiveness and drive further excellence and competitiveness on the global scale. Improvements to national research and innovation systems should be primarily delivered through national-level investment. The Structural and Investment Funds (ESIF) can also be a huge contributor to building capacity. We would recommend renewed efforts to create synergies between FP9 and ESIF which was an aspiration at the start of Horizon 2020 but proved difficult in practice. This could include, for example, support for businesses to innovate and work with HEIs (such as the ERDF-funded Innovation Vouchers provided by Scotland's Interface) or capacity building to promote the professionalization of research management. There is also the potential for greater synergy and alignment of innovation activities in the European Territorial Cooperation programmes.

Building capacity for excellent research and innovation across Europe is important. This can be achieved through synergies between FP9 and programmes such as European Structural and Investment Funds.

6. Be open to the world

Researchers want to work with the best, world-leading researchers – regardless of where they are based. The Framework Programmes already play a very important role in facilitating collaboration between the UK and EU countries. There is evidence to support the value of internationally co-authored research:

- 51% of UK articles (2014) resulted from international collaboration and this is associated with increased field weighted citations impact¹⁰
- The first scientific publications resulting from Horizon 2020 are world class – being cited more than twice the world average¹¹

Strong feedback from our members indicates that more openness to and engagement with third countries would be valuable. On the principle of supporting excellence wherever it is found researchers should be free to work with the best possible partners – for instance, Horizon 2020 co-publications with non-EU country authors are cited more than three times the world average¹². The interim evaluation of Horizon 2020 acknowledged that international cooperation could be further intensified¹³. This could be achieved through a range of approaches from alignment with Sustainable Development Goals for the proposed missions to allowing a small proportion of a grant to be spent by third country participants on direct costs. We are supportive of recommendation 10 of the Lamy Report to open up FP9 to non-European countries based on the strength of the national research base.

FP9 should significantly improve the level of international (third country) collaboration compared to Horizon 2020.

7. Improve diversity and inclusivity in FP9

There is a pressing need to address gender equality in FP9. More work could be done, such as via mentoring schemes, to promote women's careers. There are also steps that can be taken to promote equality of opportunity more widely such as supporting part-time working and ensuring that parental leave is supported.

Through FP9 the Commission should collect more equality information (e.g. ethnicity, disability) to understand better about the potential for other forms of under-representation and to inform action to redress this.

FP9 needs to make increased effort to tackle gender inequalities, and to identify and address other potential inequalities.

8. Simplify further

There are a number of fairly simple steps that could further simplify FP9, building on improvements from FP7 to Horizon 2020. This could include:

- Greater use of the two-stage application process across FP9

¹⁰ International Comparative Performance of the UK Research Base 2016, Elsevier/BEIS (2017), https://www.elsevier.com/_data/assets/pdf_file/0018/507321/ELS-BEIS-Web.pdf

¹¹ Key findings from the Horizon 2020 interim evaluation, European Commission, 2017. Available here: https://ec.europa.eu/research/evaluations/pdf/brochure_interim_evaluation_horizon_2020_key_findings.pdf

¹² *Ibid*

¹³ *Ibid*

- Aligning participation rules wherever possible
- Minimising the auditing requirements, which are considered excessive by our members

However, it is important to recognise that institutions must change internal procedures to respond to alterations so wherever possible it would be preferred to introduce refinements rather than significant change. Structural similarity between Horizon 2020 and FP9 would be welcome.

As well as simplification there can be relatively simple fixes to challenges institutions have faced in Horizon 2020 – an example of this would be allowing Article Processing Charges (APCs) to be funded after the project is closed (not just if the article output is finalised during the project).

Work to simplify Framework Programmes should continue, on the basis of improvements and refinements.

About Universities Scotland

We are a membership organisation working for the Principals and Directors of Scotland's 19 higher education institutions. We develop higher education policy and campaign on issues where our members have a shared interest.

Universities Scotland is a Scottish charity, SC029163, regulated by the Scottish Charity Regulator (OCSR). Registered office: Holyrood Park House, 106 Holyrood Road, Edinburgh, EH8 8AS.

www.universities-scotland.ac.uk