

FUTURE FRAMEWORKS FOR INTERNATIONAL COLLABORATION
ON RESEARCH AND INNOVATION: DISCUSSION REPORT

Introduction

1 The Royal Society of Edinburgh (RSE), Scotland's National Academy, hosted a discussion on *Future Frameworks for International Collaboration on Research and Innovation* on 3rd June 2019. The RSE was pleased to have the opportunity to convene a multi-disciplinary group of RSE Fellows to feed into the review led by Sir Adrian Smith FRS and Professor Graeme Reid FRSE. The review was commissioned by the UK Secretary of State for Business, Energy and Industrial Strategy (BEIS) to provide independent advice on the design of UK funding schemes for international collaboration, innovation and curiosity-driven blue-skies research, post Brexit. Fifteen RSE Fellows, including Professor Dame Anne Glover, RSE President, participated in the Chatham House Rule discussion. The roundtable discussion represents the RSE's contribution to the review process. This report summarises the key points discussed. It has not been endorsed by the meeting participants; nor does it necessarily reflect the views of the RSE.

Background

2 The UK Government has stated that it remains committed to ongoing collaboration in research and innovation with partners across Europe, and that it would like the option to associate to the excellence-based European science and innovation programmes, including Horizon Europe, the successor to Horizon 2020. The terms of any association would need to be agreed between the UK and the EU-27. The UK Government is also exploring, in parallel, credible and ambitious alternatives to deliver positive outcomes for science, research and innovation in the event that the UK chooses not to or is unable to associate. The review is considering these issues and options, and it is expected to report to BEIS Ministers by the end of July.¹

Main Discussion Points

Current position

- 3 Participants highlighted the following characteristics of the UK's relationship with the EU on research and innovation as being particularly important when considering any new landscape for UK international research collaboration:
- > Critical mass and strategic coordination of research endeavour, particularly in terms of funding and access to shared research infrastructure, datasets and facilities that could not otherwise be provided by a country working alone. This has provided increased efficiency and helped reduce unnecessary duplication.
 - > A long-term approach and funding environment for research.
 - > A focus on high quality research.
 - > Common policy and regulatory frameworks.
 - > Collaborations often sustained beyond the completion of a specific project.
- 4 The view was provided that EU frameworks for research and innovation, with their focus on excellence, have strengthened UK research endeavour, and have been hugely valuable to Scotland. 57% of Scotland's scientific publications involve international collaboration, with 56% of Scotland's international publications having an EU partner. Publications involving EU partners have even higher impact on average than the average of all international publications in the UK.² The UK has an enviable track record of securing research funding from EU programmes, with around 14% of funds allocated from Horizon 2020 having gone to UK organisations, putting the UK second across the EU by share of funding. Scottish organisations, primarily its higher education institutions, have so far secured €558m from the Horizon 2020 programme, representing around 11% of the total UK funding, and more money per head than England, Wales or Northern Ireland.

¹ More information about Sir Adrian's independent review of the design of future UK funding schemes for international collaboration, research and innovation is available at: <https://www.gov.uk/government/consultations/future-frameworks-for-international-collaboration-on-research-and-innovation-call-for-evidence>

² *A Metrics-Based Assessment of Scotland's Science Landscape* (2007-2016); Scottish Science Advisory Council; January 2019
<https://www.scottishscience.org.uk/sites/default/files/article-attachments/Scotland%27s%20Science%20Landscape%20Main%20Report.pdf>

- 5 Therefore, should the UK choose not to, or find itself unable to, associate with EU framework programmes for research, there is a need to generate a full understanding of the implications of this for UK research and innovation.

Opportunities to develop alternatives to EU funded programmes

- 6 While the majority of participants expressed the view that the UK must do what it can to preserve the closest possible relationship with EU framework programmes for research, there was a view that EU-funded programmes can be overly bureaucratic and that it is useful to have an opportunity to explore whether the UK can put in place a structure for supporting research that would offer better value than EU programmes. It was, however, acknowledged that the bureaucracy associated with earlier framework programmes has been significantly addressed in Horizon 2020 which, notably, has also brought together research and innovation.
- 7 It was noted that notwithstanding the EU Commission's commitment to drawing upon scientific and technical advice, the decision making process has on occasion resulted in EU legislation that does not reflect the UK's appetite for, and approach to, research, for example, that relating to research in the area of genetically modified organisms. There are therefore areas of research and innovation where the EU is unlikely to be a significant player, but which are highly relevant, internationally, that potentially, the UK can not only participate in, but also take the lead on the ethical and regulatory aspects and secure a competitive advantage. Similarly, in view of the fact that many current and future societal challenges are at the global scale, including, for example, climate change mitigation and adaptation, and dealing with the consequences of an ageing population, the UK needs to be operating at a global level for research. There is therefore scope for the UK to increase its international research and innovation links with research partners beyond the EU.

Challenges to developing credible alternatives to EU funded programmes

- 8 Many of the participants highlighted the ways in which research in the UK has benefitted from close ties to the EU framework programmes for research and innovation, and the challenge of replicating these through any new structure for supporting research and innovation in the UK post-Brexit, particularly over the short-term.

Uncertainty and timescales

- 9 Participants highlighted ongoing Brexit uncertainty as the most significant challenge for those in the research and innovation sectors, with the immediate uncertainty stemming from Brexit needing to be addressed. Reference was made to concerns about EU and international researchers leaving the UK and UK-based researchers being left out of, or side-lined through, EU research consortia. There is, therefore, a need for urgent clarity on the post-Brexit UK research funding landscape.
- 10 While it may be possible over the medium to longer term (i.e. 10-15 years) to develop and establish a new approach for supporting the UK's future international research ambitions, there is a need to protect and stabilise in the short term. There would need to be a staged approach to transitioning to a new system.

Long term relationships and common understanding

- 11 EU research collaborations have been founded on longstanding trust and common understanding of the framework programmes. The development of a new structure to support the UK's international research ambitions creates uncertainty, particularly in the near term and it is likely to take time for the UK and prospective international partners to establish trusted relationships and to develop a clear understanding of any new system. While there may be an enthusiasm to develop new bi-lateral agreements for research, making them work in practice is likely to be a challenge. Potential international collaborators may be reticent about working with UK-based researchers in an uncertain and unproven environment for research, as compared to the tried and tested programmes overseen by the EU.

Efficiencies of scale

- 12** In order to replicate the current benefits associated with EU research programmes, any new structure would need to comprise multiple bi-lateral and/or multi-lateral arrangements governing research collaborations between UK-based and international researchers. However, multi-country framework programmes, such as those overseen by the EU, that provide researchers with opportunities to simultaneously collaborate with multiple academics and industries, will be more attractive and efficient than schemes that allow only for single collaborations.

European Research Council

- 13** Significant attention was given to the potential that the UK would no longer be able to participate in the highly-prestigious European Research Council (ERC) grant programme. It is viewed by many as the world's leading research programme given its focus on excellence, underpinned by rigorous peer review, and its resulting competitiveness. Participants were of the view that the UK has benefitted enormously from the ERC, including being able to attract outstanding research talent to the UK. Around a half of all UK-based ERC award holders are non-UK nationals, many of whom have moved to the UK with their award.³ The view was expressed also that a positive attribute of the ERC is its focus on blue skies research whereas there was a sense that UK Research and Innovation (UKRI) funding increasingly tended to gravitate more towards mission-orientated, applied research.
- 14** If the UK were to seek to establish its own programme mirroring the ERC, there would need to be clarity about the added value of any UK programme since it would, in effect, be competing with the established and highly-regarded ERC. There would be scope, however, to explore how any new UK scheme could differentiate itself from the ERC.

Inclusive EU and international research relationships

- 15** It was recognised that the international research agenda beyond the EU is becoming increasingly important. Extending access to EU framework programmes to non-EU participants evidences this, and this is expected to increase markedly

under Horizon Europe. This also demonstrates that the EU-funded research landscape is continually evolving and that the UK may be further disadvantaged if it finds itself in a position of not being able to fully associate with EU research programmes which are increasingly interconnected with the wider international research community. Ideally, the UK should pursue an inclusive approach that seeks the closest possible relationship with the EU on research, including direct and full participation in EU framework programmes, while also developing new and stronger research relationships with international partners.

Key components of any future alternative UK structure for supporting international research collaboration

- 16** Following on from the preceding discussion, participants turned their attention to consider the key components of any future new UK structure for supporting international research partnerships. Given the high regard, internationally, in which UK research is held, it will undoubtedly remain the case that researchers from around the world will continue to want to work with UK-based partners. The key issue, therefore, will be designing a suitable mechanism that supports the UK's international and collaborative research ambitions.
- 17** While not exhaustive, key components that would need to be considered, include:
- > Ensuring an international outlook with any new research funding support structure open to international partners;
 - > Robust, transparent and clear governance structures, including ensuring participation and input from the devolved administrations;
 - > Maintenance of the Haldane principle, where decisions about what to spend research funds on should continue to be made by researchers rather than politicians;
 - > Providing for and incentivising the full spectrum of research endeavour, including blue skies, applied and interdisciplinary research;
 - > Underpinned by an unambiguous commitment to rigorous peer review;
 - > A supportive funding environment, including certain and sustained funding, and a commitment to invest in UK research infrastructure and facilities on a long term basis; and
 - > Minimising bureaucracy.

³ Frontier Knowledge for Future Gain: Why the European Research Council Matters; British Academy; May 2018 <https://www.thebritishacademy.ac.uk/sites/default/files/frontier-knowledge-future-gain-why-european-research-council-matters.pdf>

- 18** Concern was expressed that if the UK Government were to redirect the funding contribution that the UK currently makes to the EU for research into UKRI to support a new funding mechanism, Scottish higher education institutions could be disproportionately disadvantaged. Scottish institutions outperform in terms of their success in securing competitive funding from EU programmes relative to Scotland's share of the UK researcher population. This would need to be factored in to the development of any new UK support mechanism. It was also suggested that there could be more of a role for the UK national academies, including the RSE, in helping to set the direction of the UK research agenda, post-Brexit.
- 19** It was also recognised that UK research and innovation post-Brexit will need to be supported by a proportionate and flexible immigration system to ensure that international talent, wherever it is located, and at all levels of the system, can continue to come to the UK. UK immigration policy will need to take account of the distinctive needs and circumstances of the devolved nations.
- 20** It will be important to ensure that there is deliberative engagement with the public with a view to getting their buy-in when developing any new funding mechanism. This is essential to ensuring that there is a broader understanding of the value and importance of the UK remaining involved in international research collaborations. This will require action by the research sector to address any perception that the research agenda is led by institutions and researchers for their own benefit.

Additional Information

Any enquiries about this Advice Paper should be addressed to Mr William Hardie, RSE Policy Advice Manager (email: whardie@theRSE.org.uk)

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