

Non-Monetary benefits of the EU Framework Programmes

<p>Knowledge Networks</p>	<p>Access to knowledge networks and collaborations is a key benefit of participation in the EU Framework Programmes and can be considered in a number of contexts, including access to expertise; training and cohort building; collaboration across sectors and collaboration between public and private organisations. Examples are provided under the following three headings.</p>
<p>Support for multi-lateral collaborations</p>	<p>The Framework Programmes are unique around the world for their ability to promote multilateral collaboration and multinational consortia. This has been achieved through various initiatives within the Programme, such as through the Future and Emerging Technologies programmes (in Horizon 2020) and the European Research Council (ERC). ERC Synergy Grants support joint bids from between 2 and 4 Principal Investigators.</p> <p>These initiatives, such as the €1 billion FET Flagship Human Brain Project, run over several years and bring together researchers from a many different countries in a way that has not been achieved by any other domestic or bilateral research programmes.</p> <p>Framework Programmes have also enabled multilateral collaborations between public and private organisations, including through Public-Private Partnerships such as the Innovative Medicines Initiative (also detailed in “Economies of Scale” and “UK influence and leadership”).</p> <p>Further case studies on the importance of multilateral collaboration for rare disease research are also provided under a separate heading.</p>
<p>Access and support for training for researchers, students and technicians</p>	<p>The framework programmes provide access to training support for researchers at all career stages, predominantly, but not exclusively, through the Marie Skłodowska-Curie Actions (MSCA).</p> <p>MSCA Innovative Training Networks (ITNs) support joint research training and/or doctoral programmes, that are conducted in partnerships of universities, research institutions, and non-academic organisations in Member State (MS)/associated countries. Participation can have an important added benefit building international cohorts of early-career researchers.</p> <p>MSCA Research and Innovation Staff Exchange (RISE) supports exchange of research and technical staff employed in MS/associated countries. These exchanges may take place between MS/associated countries as well as a number of non-EU/non-Associated Countries. This programme has been particularly highlighted as a means of supporting global networks of rare disease research within the EU and beyond its borders.</p>
<p>Support for rare diseases research</p>	<p>Rare diseases, of which there are an estimated 6000 to 8000, may affect up to 30 million people in the EU. These conditions often lack means for diagnosis and therapy. This is largely due to small and dispersed patient populations and fragmented research expertise.</p> <p>Pan-EU support has been instrumental in coordinating rare disease research through the formation of the European Reference Networks (ERNs). ERNs are funded by a several EU funding programmes, including the Health Programme, the Connecting Europe Facility and Horizon 2020. The networks have had a major effect on research and care by linking thematic expert centres across the EU.</p> <p>A current H2020 call on Rare Disease European Joint Programme Cofund makes provision for collaborators based in at least 5 MS/associated countries to bid for funds to support the development of a virtual platform for rare diseases information; enhance uptake of research results into the clinic, and; strategic coordination.</p>

	<p>The Academy considers that rare disease research in the UK, and the EU, would be negatively affected by a reduction of UK participation in the Framework Programmes. This would ultimately impact directly on outcomes for patients with rare diseases.</p>
Economies of Scale	<p>The scale of the certain initiatives within the framework programmes would be extremely hard to replicate at a national level.</p> <p>For example, the Innovative Medicines Initiative (IMI) is the largest public private partnership in the life sciences and as a result would be extremely challenging to replicate on a domestic scale.</p> <p>IMI2 (which runs from 2014-2024) has funding of €3.276 billion, of which approximately half is contributed by the European Commission through Horizon 2020. This is matched in kind by members of the European Federation of Pharmaceutical Industries and Associations (EFPIA) and other associated partners.</p>
Global Challenges	<p>Addressing Global Challenges, such as the threat of AMR, is encouraged in a variety of ways by the Framework Programmes.</p> <p>For example, the New Drugs for Bad Bugs (ND4BB) programme which has received €650 million from the IMI. ND4BB brings together academics with small and large pharmaceutical companies to advance the development of new antibiotics.</p> <p>The programme began in 2012 and has so far commenced 8 projects covering the discovery, development and economics of new antimicrobials. UK universities and SMEs have been involved in a large number of these projects.</p> <p>One programme funded by this initiative, the LAB-Net network, seeks to improve the network of clinical laboratories to better share data and expertise now includes over 600 laboratories in 42 countries.</p>
Bringing together the best and the brightest	<p>The multilateral collaboration afforded by the Framework Programmes enables the researchers from across the MS/associated countries to collaborate on research projects. The UK benefits in numerous ways:</p> <ul style="list-style-type: none"> • accessing the best expertise around Europe; • provision of support for Networks of Expertise, and; • through international training schemes (explored under the heading "Providing the scaffold for the mobility of talent"). <p>Beyond supporting the brightest and best, the Framework Programmes can help to bridge fragmented research expertise both within the EU and globally to address particular research problems that are challenging to address at a domestic level.</p>
Market Access	<p>Participation by companies in EU funding programmes often has benefits beyond the immediate financial award, particularly for SMEs.</p> <p>For example, FP7 and H2020 have provided increased focus supporting market access for SMEs, for whom market failures are more common.</p> <p>For example the Research for SME and the Cooperation Programmes of FP7 were designed to improve market access. In Horizon 2020 there was a further focus on encouraging international collaboration through collaboration with countries outside of the EU, including the US, Japan and Korea and LMICs.</p> <p>UK-focused analysis of impact on market access not available, however the ex post evaluation of FP7 considered the impact on all participants from across the EU. This evaluation reported access to new markets as motivation for participation in the Research for SME Programme and the Cooperation Programme at 63% and 55% respectively. SMEs also found that increased sales to new customers/markets was</p>

	<p>the most notable economic impact as a result of their participation with 45% reporting increased sales to in other EU Member States (MS), and 37% reporting increased sales to new markets as a product of their involvement in the programme.</p>
<p>UK influence and leadership</p>	<p>The UK is an attractive research partner due to the excellence of its research base. This is supplemented by the ability to lead and shape specific activities within the Framework Programmes. The Academy believes that erosion of this ability to lead large scale, pan-European consortia would be detrimental to the attractiveness of the UK as a research partner.</p> <p>Participation in the Framework Programmes affords the UK influence over the way that emerging technologies are incorporated into healthcare settings and the future regulation of these technologies. For example, the IMI supported the GetReal project which considered how "Real World Evidence" (RWE), of the effectiveness of new drugs could be incorporated earlier in pharmaceutical R&D and the healthcare decision making process.</p> <p>The UK was project coordinator for GetReal and partners included NICE, the European Medicines Agency, GSK, AstraZeneca and the University of Manchester and University of Leicester. Between 2013 and 2017 the project cost €16.5 million, with €8 million coming from the Commission. Subsequently the project has received two years further funding from IMI.</p>
<p>Benchmarking against the best in Europe</p>	<p>In order to win EU funding from the Framework Programmes, UK-based researchers must compete against international researchers from across the MS and associated countries. This international competition drives up standards and provides an opportunity for UK-based researchers to benchmark themselves against the best in Europe. The Academy considers that this would be hard to replicate this on in a domestic scheme.</p>
<p>Providing the scaffold for the mobility of talent</p>	<p>The European Commission's Framework Programmes provide the flexibility and support for the mobility of research talent.</p> <p>The MSCA Individual Fellowships support the most promising individual researchers from anywhere in the world to undertake research in an institution in any MS/associated country.</p> <p>These awards are highly prestigious and competitive. Successful applicants have flexibility in choosing where to conduct their research and at present the UK is the top destination for MSCA fellows, with around 11% of the awardees in FP7 choosing to work in the UK. Five UK institutions were among the top 10 in terms of the number of MSCA fellowships under FP7.</p> <p>These MSCA fellowships draw excellent global talent to the UK, as well as allowing UK researchers to further their careers in other MS/associated countries.</p> <p>ERC grants also provide awardees with flexibility to be mobile as they can move with the recipient between institutions in MS/associated countries. Between 2007 and 2016, the UK was the most popular destination for ERC awardees to move to (with 20% of all researchers that moved countries coming to UK).</p>