

April 2026

Strategic Priorities Fund (SPF)

Final Evaluation – Main report



April 2026

Strategic Priorities Fund (SPF)

Final Evaluation – Main report

Technopolis, in collaboration with Science-Metrix, Ipsos MORI and CECAN

Table of Contents

Executive Summary	1
1 Introduction	9
1.1 Key features of the Strategic Priorities Fund	9
1.2 Our approach to evaluating the Fund	13
2 Main findings	18
2.1 SPF was a strategic mechanism for allocating R&I funding	18
2.1.1 The Fund sought to establish a thorough and transparent process to select the best possible opportunities for supporting Fund objectives	18
2.1.2 SPF established a portfolio of programmes aligned with Fund objectives	21
2.2 SPF programmes and projects have progressed considerably in the delivery of R&I outputs	26
2.3 SPF has helped to drive an increase in MIDRI (of high quality), from applications to research and publications, and synthesis and dissemination	30
2.3.1 SPF programmes have actively encouraged MIDRI applications via various means	31
2.3.2 SPF efforts have contributed to a high proportion of MIDRI applications, but in line with wider UKRI activities	33
2.3.3 A majority of SPF programmes have employed new or enhanced processes to assess MIDRI	37
2.3.4 The multidisciplinary and intersectoral nature of SPF programmes has flowed through to topics covered in SPF projects and the composition of research teams	38
2.3.5 SPF programmes have also put in place mechanisms to bring together knowledge and insights from across their projects and activities	44
2.3.6 These efforts seem to translate into a high degree of multidisciplinary and intersectoral collaboration in SPF publications	46
2.3.7 There are early indications that SPF's MIDRI focus could have longer term (ecosystem) effects, reinforcing a wider momentum, an expected impact of SPF	50
2.3.8 The experience in SPF and evidence collected in this evaluation provides some useful reflections and lessons learnt with regards to supporting and enabling MIDRI	52
2.4 SPF has helped to address government R&I priorities, via additional expenditure, and through government department involvement in and use of research developed under the Fund	56
2.4.1 SPF has increased UKRI spend in government R&I priority areas, an expected outcome of SPF	56
2.4.2 There was ongoing involvement of government across SPF programmes	58
2.4.3 PSREs involvement in SPF projects is higher in comparison with other grants funded by UKRI, but the overall scale of activities is limited	60
2.4.4 There is also evidence of increased collaboration (with government and PSREs) in SPF publications	62
2.4.5 SPF adds value in efforts to address government R&I priorities	64

2.4.6	Programmes put in place strong mechanisms to distribute findings relevant to government departments _____	66
2.4.7	There is also positive evidence of uptake by government and of contributions to supporting government policy and practice, an expected outcome of SPF _____	68
2.4.8	There is evidence of increased understanding between research councils and government departments on how to engage and collaborate beyond SPF, an expected outcome of SPF _____	71
2.4.9	The experience in SPF and evidence collected in this evaluation provides some useful reflections and lessons learnt with regards to addressing government R&I priorities _____	74
2.5	First assessments of Value for Money suggest a positive return _____	76
2.5.1	Economic impact _____	76
2.5.2	Value for Money assessment _____	76
3	Conclusions and recommendations _____	80
3.1	Conclusions _____	80
3.2	Recommendations _____	82
3.2.1	Recommendations for future similar activities _____	82
3.2.2	Recommendations for future similar evaluations _____	82
	List of Acronyms and Abbreviations _____	84

Tables

Table 1	R&I outputs emerging from SPF (research council) projects _____	27
Table 2	R&I outputs emerging from SPF and UKRI projects, per £m invested _____	28
Table 3	Number of SPF and UKRI applications by FoR, and % also tagged to other FoRs _____	34
Table 4	Multidisciplinarity of selected SPF projects (Top 20 based on MI) _____	40
Table 5	Multi and interdisciplinary research indicators of SPF papers and comparators _____	49
Table 6	(Average) yearly total value of grants (in £m, nominal figures) _____	57
Table 7	Increase in average yearly total value of grants accounted for by SPF _____	57
Table 8	Top 5 Public Sector Research Establishments involved in SPF grants _____	61
Table 9	Normalised share of intersectoral co-publications between academic sector and other sectors _____	63
Table 10	Analysis of SPF additionality – case studies _____	65
Table 11	Total number of publications and normalised share cited in PRL _____	68
Table 12	Uptake of programme research outputs – case studies _____	70

Figures

Figure 1	SPF Wave 1 and 2 programme portfolio by theme _____	12
Figure 2	Evaluation phases and SPF programme/project timelines _____	13
Figure 3	SPF Theory of Change _____	15
Figure 4	Evaluation methods and consultation numbers _____	16
Figure 5	Overview of methods employed to assess different aspects of MIDRI _____	16
Figure 6	SPF projects and award value by funding organisation _____	26
Figure 7	Processes put in place to support MIDRI as part of SPF competitive calls _____	31
Figure 8	Visualisation of SPF (left) and UKRI (right) applications tagged to two different Fields of Research _____	36
Figure 9	The use of processes specifically designed for the assessment of MIDRI proposals _____	37
Figure 10	Example of high multidisciplinary team composition _____	41
Figure 11	Extent to which SPF improved confidence to invest in/apply for MIDRI funding _____	50
Figure 12	Extent to which government partners were involved in SPF programme ideas/bid development and in subsequent programme implementation _____	59
Figure 13	Number of UKRI grants involving PSREs, within and beyond SPF _____	61
Figure 14	Extent to which SPF provided funding addressing government priorities _____	64
Figure 15	Extent to which government SPF has increased awareness and understanding between government, researchers and innovators and UKRI/Councils _____	72
Figure 16	Extent to which SPF involvement increased Advisory Board members' awareness of government priorities and national research efforts _____	72



Executive Summary

The Strategic Priorities Fund (SPF)

SPF is an £831 million UK Research and Innovation (UKRI) Fund that aimed to strengthen the UK's research capacity as a world leader in Research and Innovation (R&I) and address gaps in the research funding system as identified in the 2015 Nurse Review. It funded 34 programmes, which have gone on to support 1,006 individual projects¹ (plus other investments, such as infrastructure). Thirteen programmes were still ongoing when the evidence for this final evaluation was collected (fieldwork took place March to July 2025).

SPF defined its high-level objectives as follows:

System Agility	MIDRI	Government Priorities
To respond to strategic priorities or opportunities	To drive an increase in high quality Multi- and Inter-Disciplinary Research and Innovation (MIDRI)*	To ensure UKRI's investments link up effectively with cross-departmental Research and Innovation priorities and opportunities

*Multidisciplinary R&I involves different disciplines working independently on a common problem or question while interdisciplinary R&I involves interacting and working collaboratively from the outset.

Aims of the Evaluation

UKRI commissioned Technopolis (with Science-Metrix, Ipsos MORI and CECAN) to undertake a Fund-level evaluation of SPF. The study took place in phases from 2020 to 2025, with this report representing the main output from the final evaluation.

The evaluation focuses on assessing changes that can – to some extent – be attributed to the Fund, using qualitative and quantitative evidence. It also draws comparisons with benchmarks, including with 'business as usual' (e.g. other existing funding mechanisms) or what could have been achieved via other means, to assess additionality.

The evaluation uses a mixed-methods approach grounded in a Theory of Change (ToC). Given the nature of the Fund, the ToC placed a strong emphasis on SPF as a mechanism to drive high-level objectives, and as a consequence the study has focused on providing evaluative judgments to assess changes in process, knowledge, behaviour and collaboration patterns.

It presents an early assessment of outcomes, considering that some programmes are still ongoing (the last will close in 2029/30) and that expected outcomes would take 2–3 years to materialise after programme completion.

¹ SPF projects include 670 research grants, 8 fellowships and 1 training grant awarded by Research Councils, plus 188 Innovate UK projects, and 139 Met Office grants. The terms projects, grants and awards are used interchangeably in the report.



Over 280 unique stakeholders were consulted during the final evaluation phase via interviews and surveys, including SPF programme leads, co-leads, partners, participants and Advisory Board Members, plus representatives from government departments and agencies. Across all phases of the evaluation there were over 750 contributions made by stakeholders in total, via interviews, workshops and survey responses. The evaluation also intended to mobilise evidence from individual programme evaluations, however, by the end of April 2025 only five programmes had completed final impact evaluations, and so available information was limited.

Evaluation Questions (EQ) and Findings

Introduction

SPF was designed as a mechanism to allocate funding to a portfolio of programmes that aligned with its objectives, with a centralised process for funding allocation (to programmes) and a decentralised process for programme design/implementation.

As such, and by design, the selection of the portfolio was the main mechanism the Fund had at its disposal to provide strategic steer to meet its high-level objectives.

This process included the establishment of objectives and bidding criteria (to steer programme bids to align with intentions), plus guidance for bid review by a panel (to judge alignment and select the best proposals) and the selection of programmes.

For the SPF Process Evaluation (undertaken in 2021) an assessment was made of these programme bidding and selection processes. Overall, this found that efforts had been made (despite tight timescales imposed upon the Fund) to achieve a thorough and transparent process that was purposefully designed to encourage and then select the best possible opportunities for supporting Fund objectives. However, improvements were suggested and are set out in full within that published report.

EQ: Has SPF ensured that the R&I system is able to respond to strategic priorities and opportunities? (Objective 1)

SPF has achieved this objective to some extent via three mechanisms:

Scale: SPF provided funding for medium scale programmes (£10m+), helping to address a gap in the funding system relating to mid-scale, complex initiatives.

Timing: SPF provide funding in between Spending Review allocations, at a time when R&I budgets (both of Councils and government departments) were reported to have been 'tight' and with existing funding mostly already committed, leaving limited room for new initiatives (at scale) to address emerging opportunities and priorities.

Neutral funding: A key feature of this additional funding was that it represented 'neutral resources', i.e. it was not tied to a specific Council or government department's budget. This was a transitional enabler during UKRI's formation and was reported to have encouraged greater openness and flexibility, as well as facilitating the system to address problems/challenges that crossed disciplinary boundaries. Councils reported being less proprietorial when developing and implementing SPF programmes, compared with business as usual at the time, and

more focused on supporting the best opportunities, rather than securing a share of the budget for their own purposes.

This at-scale and 'neutral' funding enabled the design of programmes that address complex challenges, involve multiple stakeholders and take different approaches.

There is qualitative evidence that SPF funding allowed councils to address opportunities that might otherwise have been missed, both because of a lack of funding (at scale) in the system, and also because the Fund (through its objectives and selection criteria, plus its stated intention to support larger programmes) provided additional impetus to look across Councils and work more closely with government departments. This in turn encouraged and enabled programme ideas that addressed emerging opportunities and more complex problems, and did so through a multi-stakeholder approach.

Overall, the timing of SPF and scale of funding plus the autonomy given to programmes, all meant that there was also potential for greater agility at programme level (although this was not an explicit expectation of the Fund). The case studies prepared for the evaluation all include discussion of how programmes have evolved and adapted to changing needs and opportunities over their lifetime. Concretely, programmes were able to adapt to barriers and opportunities posed by COVID-19, as well as to changing user needs and priorities, and learning from early implementation.

There is no further evidence of changes at the system level.

EQ: Has SPF supported an increase in high quality MIDRI? (Objective 2)

SPF had an objective to drive an increase in high quality MIDRI, including by de-risking the process of preparing and submitting MIDRI proposals, and by improving the efficacy of the funding system in assessing these. Note that the intent of the Fund was to facilitate the attraction and assessment of MIDRI applications of high quality, rather than to attract 'higher quality' MIDRI in comparison with business as usual.

The evaluation has assessed this objective from a holistic perspective, from the effect the Fund had in influencing the processes that programmes had in place to fund MIDRI, through to the delivery of MIDRI outputs.

The evidence collected in this evaluation shows that **SPF helped to drive an increase in high-quality MIDRI at all stages**, from applications to research teams and publications, through to synthesis and dissemination of outputs (see Section 2.3).

Main mechanism. SPF has enabled a focus on supporting and enabling MIDRI across much of its programme portfolio via a 'light touch' approach; making funding available for:

- programmes intended to support MIDRI, with councils retaining autonomy as to how best to execute this objective.



- programmes that address cross-departmental government priorities and embed participation of different stakeholders across the programme cycle.
- programmes that are led in collaboration by more than one Council.

Effect on processes. This 'light touch' approach seems to have been effective in supporting high-level objectives:

- Most programmes (90% of those running calls) encouraged MIDRI applications through call text and criteria, with nearly half making MIDRI a requirement.
- The majority of programme leads (68% of programmes with calls) reported success in attracting a sufficient number of high quality MIDRI proposals as a result, and nearly half of all SPF applications included two or more Fields of Research.
- Nearly all programmes (90%) also put in place processes specifically designed for the assessment of high quality MIDRI applications. Furthermore, Programme leads report that SPF funding and its characteristics (size, timing, neutral nature, see Objective 2 below) allowed them to enhance mechanisms to assess MIDRI or to put them in place for the first time, with 57% stating that those processes were new or enhanced (this also means that for 43% those mechanisms were business as usual). SPF did not set a target for this, but considering the non-prescriptive nature of the Fund (with Councils having full autonomy to make those decisions), one can argue that this is a positive result.

Effect on outputs. The processes above (to attract and assess high quality MIDRI proposals) translated into a high degree of MIDRI-ness among SPF projects, and a high degree of multidisciplinary and intersectoral collaboration in SPF publications.

Programme composition has also contributed to a high degree of MIDRI in publications. We found that papers from SPF projects have a degree of multidisciplinary (diversity of authors' disciplinary background) that is above the world average (1.35 vs 1), and above rates for UKRI and UK papers (1.10 and 1.09 respectively). These differences are statistically significant (95% confidence interval). The results need to be taken with some caution as they are based on just 56% of SPF projects that have so far produced publications. They are however consistent with evidence collected at the baseline and interim stage.

In terms of the quality of those MIDRI outputs themselves, we do not have a direct metric since MIDRI is measured as a standardised scale (i.e. measuring the degree of MIDRI-ness), rather than a binary indicator. However, our evidence shows that SPF produced publications with a high degree of multidisciplinary, and that SPF publications achieve higher citation impact in comparison with benchmarks (SPF papers achieve a field-weighted citation score of 1.65 versus 1.34 for UK papers more generally). Also, the multi-disciplinary nature of SPF programmes and outputs seem to have also contributed to higher uptake among policy makers (see below, Uptake).

System level effects (impacts). There are early indications that SPF's MIDRI focus could have longer term and wider (ecosystem) effects based on evidence from programme leads who report using their learnings from SPF in other programmes/activities. The relatively small scale of SPF vis-à-vis the UKRI portfolio (1–2% of grants awarded between 2018 and 2024) may limit a system level effect.

EQ: Has SPF improved the link between UKRI's investments and cross-departmental R&I priorities and opportunities? (Objective 3)

SPF has helped to address government R&I priorities, via additional spend, through government department involvement in programmes and projects, and through the dissemination, uptake and use of outputs developed under SPF (see Section 2.4).

- **Additional spend.** Based on comparisons of historical UKRI investment and SPF, we conclude that SPF increased UKRI spend in several priority areas, including research on productivity, modern slavery, bacterial plant diseases, and mental health (in comparison with the level of funding before and alongside SPF). There is likely to be a degree of SPF additionality in this increased level of spend. However, it is difficult to ascertain the extent to which these funds would not have been available to these areas in the absence of SPF, as it is not possible to measure the counterfactual scenario.
- **Encouragement to involve government departments in designing programmes to address their priorities.** SPF encouraged programmes to involve government departments and agencies in their design, scoping and ongoing implementation. Evidence from across the different phases of evaluation demonstrates that this has been the case, with 80%–90% of programmes reporting government involvement in preparatory stages, programme implementation and ongoing programme governance and oversight (at baseline, interim and final evaluation stages respectively). Also, our assessment reveals that the process of priority identification was improved in Wave 2 where SPF offered an opportunity to use the Areas of Research Interest (ARIs) to identify areas of cross-departmental priorities. This also contributed to further discussions on how to improve them.
- **Dissemination of knowledge.** Almost all programmes put in place appropriate and targeted mechanisms to distribute findings to relevant government departments, and all of the government representatives consulted for the final evaluation had seen outputs emerging from SPF that were of very high quality and addressed originally identified needs.
- **Uptake.** Engagement in design, alignment with priorities, and dissemination of results have contributed to high uptake of knowledge outputs. This is an expected outcome of SPF and evidenced via assessment by programme leads, citation impact analysis, interviews with government departments and concrete examples of uptake. Citations of SPF publications in policy-related literature is higher than other UKRI grants [1.71 vs 1.20, where 1 is the overall UK average]. These differences are statistically significant (95% confidence interval). This level of



engagement, alignment and dissemination has also translated into policy effects (see below, Policy, Economic, and Societal impacts).

- **System level effects (impacts).** There is also qualitative evidence of increased understanding between councils and government departments on how to engage and collaborate beyond SPF, as well as some early examples of new joint initiatives to address government R&I priorities (an expected outcome of SPF).

EQ: Has SPF delivered knowledge, economic and societal impact?

In addition to the system level impacts described above, SPF was also intended to deliver knowledge, economic and societal impacts, via its programmes.

There is evidence of SPF delivering knowledge and societal impacts to some extent, but in line with progress expected at this stage of the Fund and programme delivery.

Knowledge and R&I outputs. SPF grants have so far reported 7,077 publications to Researchfish (to December 2025), an average of 11 publications per award. These papers have a higher citation impact (measured by Field Weighted Citation Score, FWCS) in the academic literature, on average, than other UK or UKRI papers from the same period (1.65 versus 1.34 and 1.53, respectively).

Despite the complex nature of research carried out within SPF programmes, including the involvement of different disciplines and stakeholders, SPF projects are also reporting a range of other R&I outputs at rates (outputs per £m) that are above the UKRI portfolio average – particularly contributions to public policy development (1.78 policy outputs per £m invested versus 0.64).

Societal impacts. Research outputs and insights emerging from SPF programmes are already helping to inform government policy decisions and practice. Most of the government representatives interviewed indicate that the outputs emerging from SPF programmes have been relevant to the policy work they are doing, and in many instances closely aligned with policy priorities highlighted in sector plans, government reviews and action frameworks. This is further corroborated by citation analysis of SPF publications in policy related literature.

Government representatives provided concrete examples of SPF programmes and projects' findings being used to inform policy action plans, or practical guideline documents, in a variety of areas, from future health to biodiversity and climate challenges. Examples of SPF influence are set out below. They showcase the role played by research knowledge in informing policy decisions.

<p>Bacterial Plant Diseases: Protocol to address Xylella fastidiosa disease now available in Local Authorities around the UK (2022).</p>	<p>Modern Slavery and Human Rights Policy and Evidence Centre (MS PEC): The Statutory Guidance for Modern Slavery Victim Identification and Support in England and Wales was updated in line with recommendations (2023).</p>	<p>Nucleic Acid Therapy Accelerator: Programme findings were incorporated in the England Rare Diseases Action Plan (2025).</p>
---	--	---

<p>Transforming the UK Food System: Programme concepts and principles were used to build the second part of the National Food Strategy for England (2025).</p>	<p>Trustworthy Autonomous Systems (TAS): Information was used to inform the development of the Transport AI Action Plan (2025), which sets out the approach DfT is taking to working with AI.</p>	<p>UK Climate Resilience: Programme outputs have been used to directly inform the Climate Change Risk Assessments (CCRA) Evidence Report (2022).</p>
---	--	---

Further societal impact. No additional empirical evidence of wider impact was found at this stage (via surveys, interviews or case studies), beyond the uptake of SPF insights in policy and practice. Similarly, while programme level evaluations highlighted programme ambitions to support societal, health and environmental impacts, no impact assessment (so far) was able to provide empirical evidence on social outcomes achieved and to attribute them to a specific SPF programme. From a Theory of Change perspective, impacts are only expected to emerge after programme completion.

Economic impact. Multiple programme evaluation reports mentioned that it is still premature to fully assess the economic impact of the programmes. However, some stated that they expect programme activity to result in increased productivity and efficiency savings for companies, and the economy as a whole.

Some more specific examples of economic benefits were highlighted at the individual participant or business level (including improved commercial opportunities and a small number spin-outs start-up companies).

EQ: To what extent does SPF represent value for money, relative to the size of the investment and compared to alternative ways of achieving the same impacts?

Return on investment (RoI). This Fund level evaluation relied on programme level assessments of RoI. However, only a limited number of programmes (four) have so far been able to assign a monetary figure to the impact of SPF, mainly due to issues of time lags (the time it takes for impacts to materialise) and the nature of impacts (e.g. improving policymaking).

The limited evidence is nonetheless positive. For example, programme-level evaluations suggest individual SPF investments are already generating returns, ranging from £100m in productivity benefits to multi-billion valuations of data resources (see Section 2.5).

Overall value for money. To complement the limited information on RoI available at programme level, this evaluation has looked at the extent to which SPF has delivered in excess of what would have been possible with alternative sources of funding. The evidence (already presented above), via comparisons with UKRI sources of funding, shows that SPF is delivering R&I outputs (per £m) that have higher uptake, and

consequently higher impact, in terms of citation in academia and in policy related literature, with higher probability of delivering knowledge and social impact.

It is also delivering more MIDRI publications in comparison with other UKRI funding.

The evidence also indicates systemic effects (e.g. council and government collaborations) and concrete contributions to policy. Those two areas are more difficult to compare to other funding sources, but qualitative evidence suggests that SPF has allowed the pursuit of opportunities that would have otherwise been missed.

Taken together, evidence suggests that SPF has represented good value for money.

EQ: Overall, has SPF worked and was it delivered as intended?

Based on the evidence above, we conclude that the Fund has been delivered as intended and has made positive contributions to its high-level objectives.

There is strong consensus amongst those involved in SPF that the Fund is supporting programmes that address complex and multi-faceted challenges that it would be difficult to fund and address via other means. Tackling those complex challenges requires, in many cases, a multi or interdisciplinary perspective that other funding routes are often not well suited for. The 'neutral' resources offered through SPF facilitate this crossing of boundaries, while the scale of funding on offer has been a key enabler to implement a multi- and inter-disciplinary approach.

The extent to which this approach delivered higher economic and societal impact is still unclear based on the evidence available so far.

Recommendations for future similar initiatives

The experiences of SPF and evidence collected in the evaluation provide some lessons learnt that future interventions should consider.

With regard to **supporting and enabling MIDRI**, this includes the need to:

- standardise processes to further facilitate cross-council collaboration
- invest time and resources in setting up (new) MIDRI partnerships
- allow sufficient time for effective integration of knowledge across disciplines

With regard to **addressing government R&I priorities**, this includes the need to:

- build upon the process of priority identification used for second wave of SPF bids
- strengthen co-development processes between government and councils via dedicating more time to programme scoping
- plan for and dedicate resources throughout the programme to maintain engagement
- ensure strong (and targeted) engagement with government in later phases of projects and programmes, including consideration of the appropriate nature of outputs and dissemination activities to engage with these potential end users

1 Introduction

This report is the output from the final phase of the Fund-level evaluation of the Strategic Priorities Fund (SPF). This section provides a brief introduction to the Fund and evaluation, before the remainder of the report presents the main findings.

1.1 Key features of the Strategic Priorities Fund

SPF was announced in the Industrial Strategy White Paper² in 2017. It was part of a wider package of UK Research and Innovation (UKRI) measures to support one or more foundations of the Strategy. SPF provided the discovery-led research and innovation (R&I) to complement more directed or challenge-led elements.³

SPF aimed to strengthen the UK's research capacity as a world leader in R&I and address gaps in UK research funding as identified in the Nurse Review.⁴ This singled out issues with the UK research system's (sub-optimal) (i) ability to respond quickly and materially to emerging challenges or opportunities, (ii) support for multi- and inter-disciplinary research and innovation (MIDRI), and (iii) awareness and coordination of strategic research efforts across councils and government.

SPF was committed to fund R&I that addressed each of these aspects and defined its main objectives (and sub-objectives) accordingly, as set out below.

Responding to Strategic Priorities of Opportunities (Agility)

The Nurse Review argued that a new, collective fund would improve the overall system's ability to respond to emerging challenges and opportunities, by creating financial headroom outside the Councils' (and government departments') budgetary commitments, which extend forward over many years with little room for new initiatives. It was argued in the SPF Business Case that these budget pressures also translate into underinvestment in mid-scale (£10m–£15m) investments, since larger, more complex projects can bring bigger risks and can make co-ordination and collaboration harder, resulting in co-ordination failure.

SPF Objective: To respond to strategic priorities or opportunities, including by

- improving the agility of the funding system to respond to emerging opportunities
- providing a funding route for medium scale programmes

² <https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future> (Published under the 2016–19 May Conservative government).

³ SPF Business Case (2019).

⁴ Ensuring a Successful UK Research Endeavour, BIS/15/625, Nov 2015

The agility was expected at the Fund/UKRI level, through the provision of waves of funding outside of the spending review cycle. Individual SPF programmes may also demonstrate agility during their implementation, but this was not an explicit expectation in the design of the Fund.



Driving an Increase in MIDRI

Multidisciplinary R&I involves different disciplines working independently on a common problem or question, while interdisciplinary R&I involves disciplines interacting and working collaboratively from the outset. There is growing recognition that MIDRI can deliver progress on social challenges where monodisciplinary research may struggle. Knowledge and tools from multiple disciplines can be combined to better encircle multi-faceted problems (multi-disciplinarity), while disciplines can be more fundamentally reframed to address specific phenomena (interdisciplinarity). There is also a substantial literature documenting the various barriers regarding the quality and volume of MIDRI supported within the UK. This highlights the wariness of individual researchers and the greater risk of trying to win support for inter-disciplinary research, as well as the capacities of peer review systems to judge monodisciplinary work alongside MIDRI.

SPF Objective: To drive an increase in high quality MIDRI, including by:

- de-risking the process of preparing and submitting MIDRI proposals
- improving the efficacy of the funding system in assessing MIDRI proposals



Addressing Cross-Departmental R&I Priorities

The Nurse Review reflected that good government depends upon the development of rich networks within the wider research community: promoting and sustaining two-way dialogue, as well as creating awareness and understanding of where current research may be of national benefit and of the nature of both immediate and longer-term problems facing policymakers.

SPF Objective: To ensure UKRI's investment links up effectively with cross-departmental government R&I priorities and opportunities, including by:

- improving join up across departments to establish consensus on priorities
- increasing understanding of government priorities among R&I funders
- improving the ability of the R&I system to deliver priorities by enabling Public Sector Research Establishments (PSREs) to bid for SPF-funded open competitions

Additionally, the original SPF logic map (annexed to the Business Case) reveals that there were also ambitions in this area (not stated as objectives) for the SPF to:

- increase research and development (R&D) spend that aligns with government R&I priorities (e.g. the 2017 Industrial Strategy)
- strengthen linkages and communication mechanisms or structures between and across partners involved in SPF programmes (i.e. Councils, PSREs, government

departments), including new ways of working or collaborating between them (e.g. new coordination structures with membership from government departments, the third sector, industry, etc.)

Note that, following our Theory of Change (ToC), the later phases of the evaluation have focused on the SPF objectives relating to increasing MIDRI and addressing government priorities, where further outputs, outcomes and impacts are expected to continue to emerge over the lifetime of SPF programmes (and beyond). The other objective (system agility) relates to the set-up of the Fund and the selection of programmes, and was therefore covered in the Process Evaluation (undertaken in 2021). Key findings from that stage have been incorporated within the current report for completeness (see Section 2.1).

With a budget of around £831m, SPF had the capacity to engage across the UK R&I system in these three transformative aspects. It supported 34 programmes across two waves – the first (launched in 2018) awarded £334m to 15 programmes, while the second (2019) awarded £497m to 19 programmes.⁵ The resulting SPF portfolio (see Figure 1) encompassed a diverse range of R&I activities at various stages of maturity, and from across a broad range of thematic areas, with each addressing at least one (and commonly all) of the three main objectives of the Fund.

All UKRI Councils were leading at least one programme and partnering on others, along with the great majority of devolved administrations, government departments and executive agencies with significant R&D budgets. A small number of Department for Science, Innovation and Technology (DSIT)⁶-funded R&I organisations (PSREs) were also involved as leads or partners for programmes (other PSREs could then also apply to be eligible to access funding through programmes themselves).

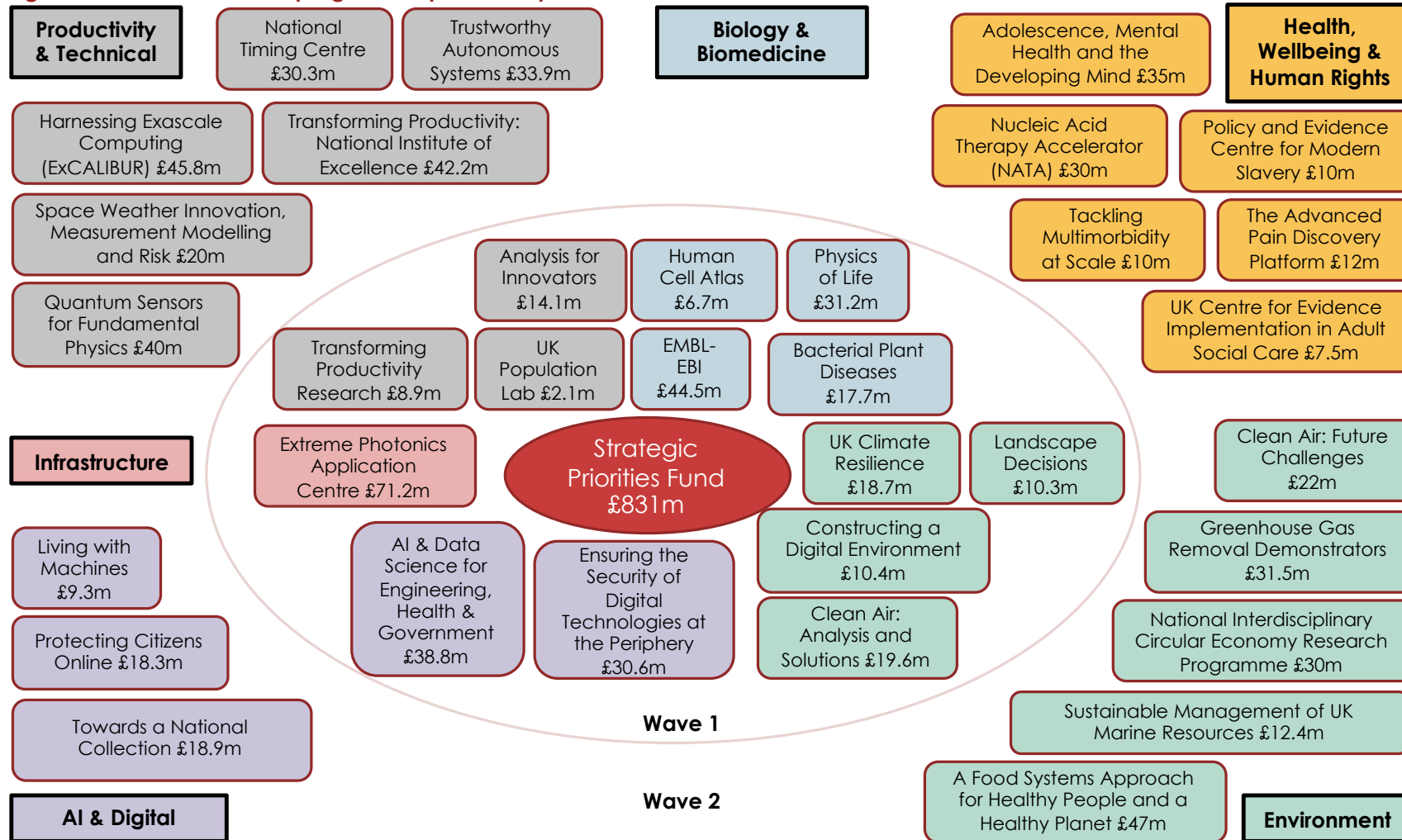
Further details on each of the programmes, including their scope, funding, partners and alignment with SPF objectives, is provided in Appendix B.

⁵ Note that while there are 34 programmes, the Clean Air Future Challenges programme in Wave 2 is a continuation of the Clean Air Analysis and Solutions programme in Wave 1, with a single governance structure.

⁶ The report refers to DSIT throughout for simplicity, even though the Department for Business, Energy and Industrial Strategy (BEIS) was the department responsible at the time of the Fund's establishment. BEIS was dissolved on 7 February 2023, with its functions split into three new departments



Figure 1 SPF Wave 1 and 2 programme portfolio by theme



Technopolis, based on programme information.

1.2 Our approach to evaluating the Fund

UKRI commissioned Technopolis (with Science-Metrix, Ipsos MORI and CECAN) to undertake a Fund-level evaluation of SPF. The aims of the evaluation were to:

- demonstrate what the Fund has delivered for taxpayers
- help build the evidence base on 'what works' in supporting high quality MIDRI and ensuring R&I responds to strategic opportunities and priorities
- inform ongoing improvements to the Fund or similar initiatives

The evaluation was to be summative and formative, and to cover 6 process and impact (& economic) evaluation questions (see Box below), as well as a further 29 more detailed sub-questions under each of these (see Appendix E).

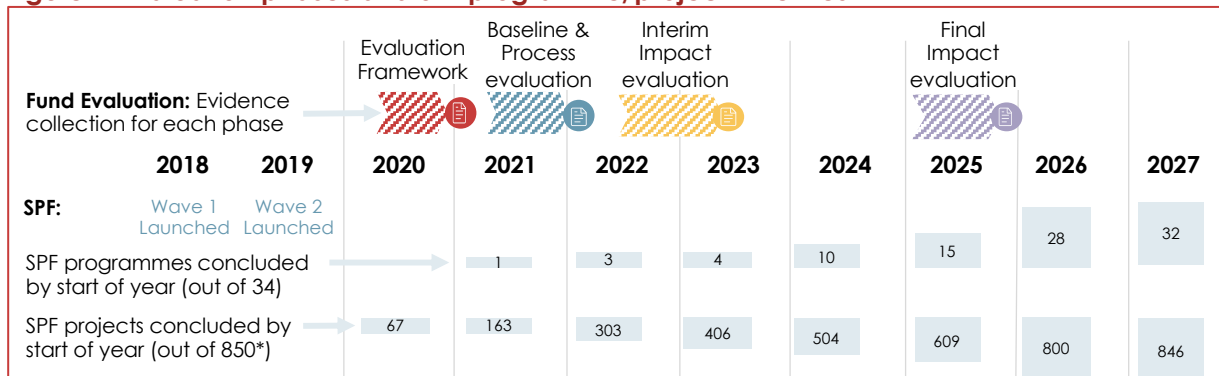
High-level Evaluation Questions

To what extent (and how)...

- Is SPF working and being delivered as intended?
- Has SPF supported an increase in high quality MIDRI?
- Has SPF improved the link between UKRI's investments and cross-departmental R&I priorities and opportunities?
- Has SPF ensured that the R&I system is able to respond to strategic priorities and opportunities?
- Has SPF delivered economic, knowledge and societal impact?
- To what extent does SPF represent value for money, relative to the size of the investment and compared to possible alternative ways of achieving the same impacts?

The study took place in four phases over the period 2020–2025 (see Figure 2), with this report representing the main output from the fourth and final phase.

Figure 2 Evaluation phases and SPF programme/project timelines



* Excludes 139 Met Office grants and 17 with unknown start/end dates

We looked at SPF from a ToC perspective, as recommended by the Treasury Magenta Book⁷ when evaluating complex interventions. The ToC for the evaluation had at its core a Logic Model (see Figure 3, plus narrative in Appendix C) that sought to capture the outputs, outcomes and impacts expected, and which have been the focus of evidence collection and analysis in the evaluation.

The approach to the evaluation was originally set out in the Evaluation Framework (finalised in January 2021). It had the following key features:

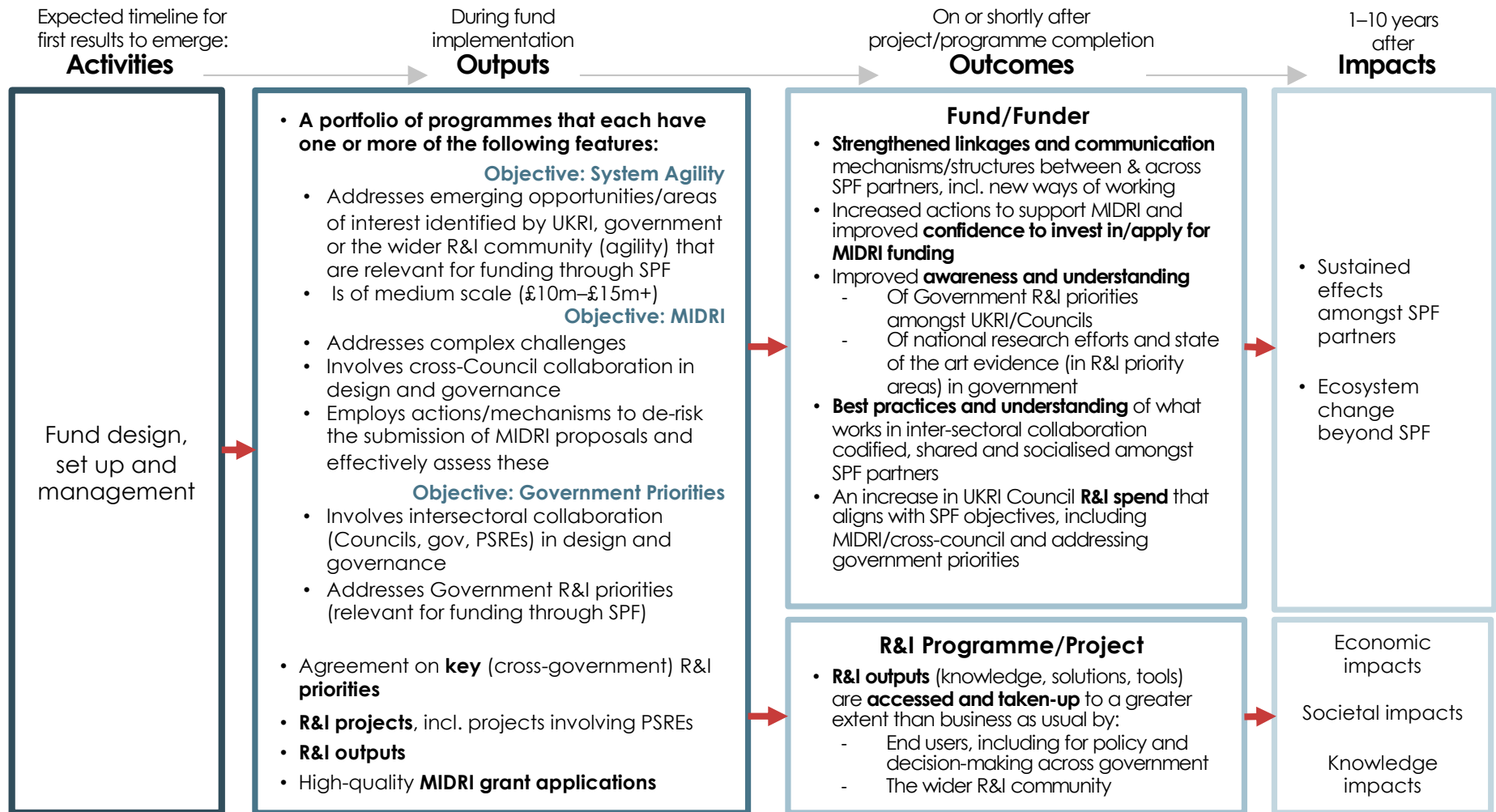
- a theory-based approach, combining qualitative and quantitative methods
- maximising use of existing information, including the outputs of individual programme evaluations, as these emerged⁸
- focused on understanding the extent to which the Fund objectives have been achieved (and how).

The evaluation had a Fund level focus, drawing on evidence emerging directly from the design and implementation of the Fund and programmes, as well as projects when relevant (e.g. R&I outputs emerging at project level that contribute to the impacts of the Fund). Not all SPF activities are delivered through calls and grants, so the approach focuses mainly at the programme level. However, the analysis of some R&I outputs and the bibliometrics relies on grant-based data, as indicated in the text.

⁷ <https://www.gov.uk/government/publications/the-magenta-book>

⁸ All SPF programmes were expected to undertake monitoring of programme delivery and R&I outputs/outcomes. Larger programmes were also expected to carry out some form of evaluation (process/impact, internal/external, depending on programme size, expected impact and novelty/complexity). Of the 34 programmes in the portfolio, 22 were originally expected to undertake impact evaluations. For the final Fund evaluation, we collated and reviewed all programme-level evaluation reports that had been produced as of April 2025 (33 reports, covering 22 programmes). While the majority of these were process evaluations or interim impact assessments, there were five final impact evaluations (significantly fewer than the 12 originally foreseen for this stage), including four that had attempted to monetise (some of) the benefits generated from the programme.

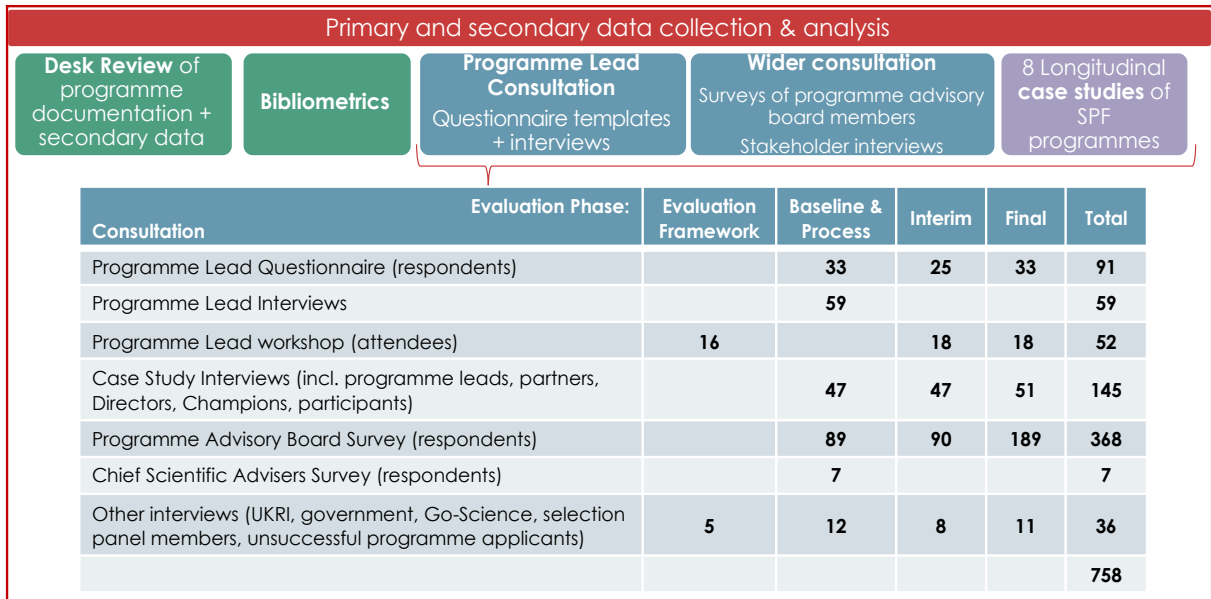
Figure 3 SPF Theory of Change



Source: Technopolis

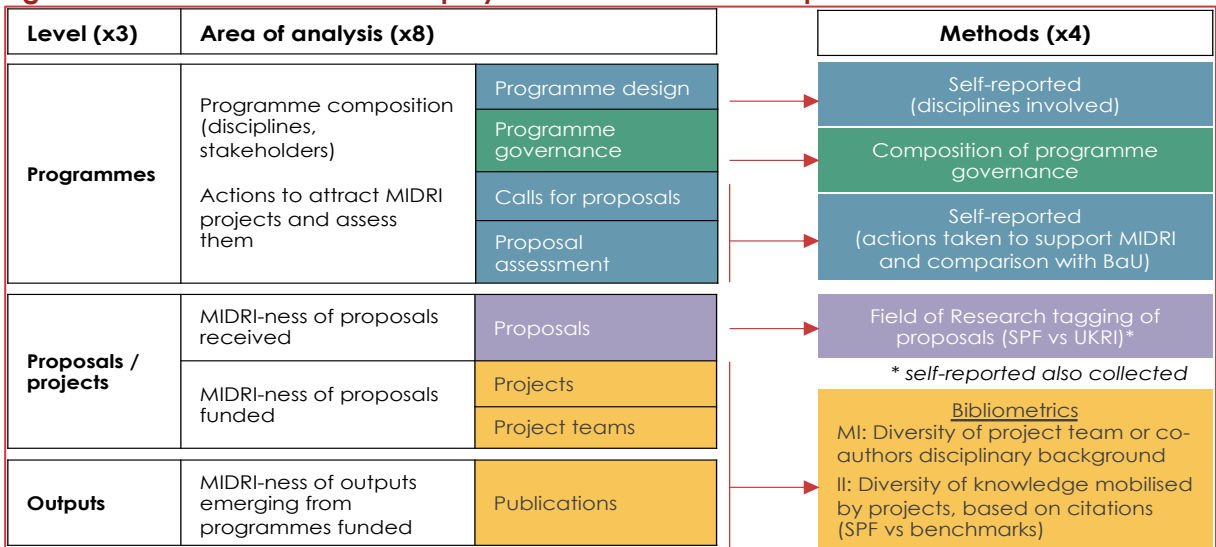
Each phase of evaluation involved 5 main groups of data collection and analysis (see Figure 4). Consultation activities were a key part of the evidence collection process in each phase. Over 280 stakeholders were consulted during the final evaluation phase via interviews and surveys, including SPF programme leads, co-leads, partners, participants and Advisory Board Members, plus representatives from government departments and agencies. Across all phases of the evaluation there were over 750 contributions from stakeholders via interviews, workshops and surveys.

Figure 4 Evaluation methods and consultation numbers



The analysis of the MIDRI SPF objective has been approached in a variety of different ways (Figure 5). Four methods were employed to explore the extent of MIDRI in relation to SPF composition, proposals, projects, project teams and outputs, as well as the extent to which actions have been taken to support and enable MIDRI.

Figure 5 Overview of methods employed to assess different aspects of MIDRI



For the final evaluation, consultation activities (surveys and interviews) took place from March to July 2025. Bibliometric analysis was undertaken in July 2025 (based on a list of SPF grants from May 2025 and a list of publications reported to Researchfish by June 2025, but enhanced with a search of acknowledgements of SPF grants in bibliometric data).⁹ Analysis of SPF outputs reported to Researchfish was undertaken in December 2025.¹⁰ The final evaluation also included a review of the 33 programme evaluation reports (relating to 22 of the SPF programmes) that were available at the end of April 2025 (the cut-off point agreed to allow time for analysis).

The final evaluation report also draws on evidence obtained through previous phases of the evaluation. For example, key results from the process evaluation (undertaken in 2021) are presented in Section 2.1.1. Similarly, selected results from surveys undertaken for the interim evaluation (in 2022) are presented, where this provides useful insight. Where such evidence is presented, it is clearly labelled with the relevant phase and year.

There were also two exercises undertaken for the interim evaluation that have not been repeated in the final phase. Instead, key results from the earlier analysis are presented within the current report:

- An analysis of UKRI (and SPF) spend in selected priority areas was undertaken in August 2022 (based on GtR data at that point). As the majority of expenditure had already been allocated by this point, the exercise was not repeated for the final evaluation.
- An analysis of application data (looking at the proportion of applications tagged to two or more fields of research) was undertaken for the interim evaluation, based on UKRI data provided in March 2023. As the majority of SPF proposals had already been made by this point, the exercise was not repeated for the final evaluation.

More information on methodology is provided in Appendix A. Case studies are presented in Appendix D, with summaries and analysis in the current document.

⁹ Only papers published to the end of 2024 are included in analysis of multi- and interdisciplinarity, as this was the last full year of data available. Citation analysis is based on publications to the end of 2022, to account for lag (only around 30% of citations are accrued in the 2 years following the publication of a paper).

¹⁰ The analysis had originally been undertaken based on outputs reported as of June 2025, however UKRI subsequently discovered that the database had not been fully updated with the previous year's reporting. The analysis was therefore re-run in December, based on the latest available data.

2 Main findings

2.1 SPF was a strategic mechanism for allocating R&I funding

SPF was designed as a mechanism to allocate funding to a portfolio of programmes that each aligned with one or more of the Fund's objectives, with a centralised process for funding allocation (to programmes) and a decentralised process for programme design and implementation. Councils, PSREs and other partners had a high degree of autonomy in running the programmes, while ongoing Fund-level involvement was light-touch, consisting mainly of oversight from the SPF Oversight Board, Working Group and central team, who monitored spend and progress with implementation, alongside evidence of emerging results.

As such, and by design, the selection of the portfolio of programmes was the main mechanism that the Fund had at its disposal to provide the strategic steer to meet its high-level objectives. They represent the main outputs at Fund level (as established in the Theory of Change).

This process included the establishment of objectives and bidding criteria (intended to steer or 'nudge' programme bids to align with Fund objectives and intentions), plus a process and guidance for the subsequent review of bids by a panel (to help judge alignment and fit with the Fund and select the best proposals) and the selection of programmes. This initial assessment and selection process sought to ensure that the individual SPF programmes and their activities were well aligned with the Fund's overall goals (alongside programme-specific aims).

2.1.1 The Fund sought to establish a thorough and transparent process to select the best possible opportunities for supporting Fund objectives

For the SPF Process Evaluation, an assessment was made of the programme bidding and selection processes, based on a review of documentation, interviews with the Government Office for Science (GO-Science), programme leads, SPF Board members, panel members and unsuccessful bidders, plus a survey of government department Chief Scientific Advisors (CSAs) who were involved in bids.

Three main components to the allocation process were assessed: priority setting, bidding, and selection. Below we summarise the key findings in each area, while the full results can be found in the Process Evaluation report, published on the UKRI website.¹¹

¹¹ <https://www.ukri.org/publications/strategic-priorities-fund-baseline-and-interim-process-evaluation/>

Priority setting: The SPF Business Case stated that 'the ultimate goal is that UKRI, working with the Department for Business, Energy and Industrial Strategy (BEIS), GO-Science and other departments, facilitates cross-government co-ordination of research priorities – potentially negating the need for a fund such as SPF to support cross-government work in the long term'. However, in the meantime, SPF was seen as a 'necessary interim measure to begin to breakdown artificial barriers to co-operation and foster the coordination and collaboration required'. As such, UKRI intended to work with government departments to draw up a list of key government priorities, with bidders (to Wave 2 only) then encouraged (though not required) to consider submitting proposals that met these priorities.

For SPF Wave 1, there was insufficient time available to arrange a centralised process for determining cross-departmental priorities, or to support engagement between Councils and government. Those submitting a programme bid were instead asked to indicate if their proposal addressed the government-related Fund objective, and if so to provide evidence that their bid aligned with a key priority for R&D (e.g. highlighted by a department's Areas of Research Interest (ARI) document) and to attach a letter from the CSA (providing assurances of a formal collaboration and policy support).

In preparation for Wave 2, however, GO-Science led work to create greater co-ordination between departments (via CSAs) in their dialogue with UKRI over the identification of priorities and the development of SPF bids. Specifically, they employed a multi-step process (see below) to identify and consolidate cross-departmental priorities, supporting the development of programme proposals.

Priority-setting process (Wave 2)



CSAs individually came up with lists of priorities and discussed these in their weekly meetings to arrive at one consolidated list. CSAs then discussed this list of priorities at a meeting with UKRI, alongside a developing list of (~80) potential Council bids. The CSAs looked for commonalities and alignment – identifying around 50 proposals.

A second meeting then considered a revised list of 23 proposals, with 8 identified as top priorities. GO-Science had further meetings with 11 government departments, all of whom were also engaging directly with the relevant councils in relation to SPF.

A final list of priority proposals (for CSAs) was established and shared with UKRI for the SPF assessment process. This included 13 top priorities (each with a department lead) and 5 second tier priorities. Some related closely to proposals originally identified, while others had evolved or represented amalgams of original ideas.

This Wave 2 process to jointly establish priority programmes was felt by the senior team within GO-Science to have worked well, helping to move the conversation forward on how research priorities can be addressed collegially. The process helped to establish close links between Councils and government departments during the formation of Programme ideas, which was then reflected in the bids that were

submitted (in terms of demonstrating alignment with government priorities, but also in the plans already established for government involvement in the ongoing implementation and governance of programmes). We also saw in the minutes of the assessment panel that this prioritisation exercise was taken into account in the discussions of the merits of bids, with a 'prioritised bid' providing a strong rationale for selection. As a result, the eventual portfolio of 19 Wave 2 SPF programmes included 14 of the 18 CSA-prioritised bids, including 10 of the 15 that were classified as a top priority. As such, we concluded that this additional process has been effective in identifying government priorities for R&I programmes to address, and in encouraging greater co-creation of Programme ideas, with the result that a majority of the top priorities identified by CSAs have been supported through SPF.

The SPF prioritisation process also provided a first test of the new government ARIs. The Nurse Review challenged government departments to take a more strategic approach to their R&D programmes and relationships with academia, which resulted in the Cabinet Office and GO-Science asking departments to begin publishing their ARIs from 2018, encompassing both near- and longer-term needs (the latter typically involving closer links with academia and cross-departmental collaboration). SPF Wave 2 was considered the first real test of these ARIs and GO-Science reported that this had revealed that they were generally not yet mature enough to be used as the basis for determining cross-departmental priorities. As a consequence, GO-Science (in coordination with the Engineering and Physical Sciences Research Council, EPSRC) established two ARI fellows to promote academic-policy engagement around the ARIs, including to streamline and make sustainable the process of producing and updating these documents.

The bidding process: Programme leads reported that they were generally satisfied with the Programme bidding process. In particular, many highlighted the simple and straightforward template that was easy to complete and enabled them to put their idea forward in a good light, while showing alignment with Fund objectives. Several also mentioned that the process (and their understanding of it) had improved between waves, as a result of the learning and experience implementing Wave 1.

Despite this positive assessment, there were a number of issues and challenges relating to the process that were raised amongst programme leads and unsuccessful bidders, or that were identified via the study team's assessment of documentation:

There was widespread discontent with the **timelines** allowed for bid development. Given that the Fund was trying to encourage bidders to move away from business as usual, with new partnerships and ways of working to address priorities and opportunities, it was felt that there was insufficient time and space to be able to do this properly. As a result, there was a tendency to put forward ideas that were already well-developed, via existing partnerships and programmes, and that were 'looking for a home', rather than developed based on the scope and focus of SPF.

Programme leads also called for greater **information and guidance** on what the Fund wanted to support (e.g. additional explanation of objectives, a greater steer as to priorities, a sense of the likely size of programmes). This was one of the main points of influence of the Fund and it was key that intentions were well understood by all involved (bidders and assessment panel). As such, greater clarity could have been provided on intentions and objectives, and how these were addressed/assessed.

The **bidding templates** were also quite short, given the scale of ambitions, with e.g. only ~1 page allowed for setting out how a proposed programme would support the various sub-/objectives of the Fund, including providing the various information and evidence requested against each. Increased word limits in the bidding template would have allowed for a fuller exposition of needs, solutions and expected benefits.

The selection process: The actual assessment process (UKRI initial sift of proposals and then panel review/selection) did not pursue the original intention to score and rank proposals, but rather relied on panel views and discussion. This process was not particularly transparent, and programme leads reported that they would have liked to have known what criteria would be used to assess proposals, before they prepared their bid. The minutes of these sessions also suggest that there was quite limited discussion of each individual proposal, with little or no mention of Fund objectives as part of the deliberations, suggesting that these may not have been a particular focus of discussions or the decision-making process.

There was also no guidance or template provided for the CSA letters of support, which were provided alongside around half of the programme bids, and which varied in depth and focus as a consequence. Some provided very limited information – just a paragraph or two confirming support for the proposal and the programme's alignment with department priorities. Others went further, for example detailing the way in which the programme was likely to address their needs and have an impact on areas of policy and practice, or setting out their various intended inputs to the ongoing governance and implementation of the programme. Ensuring the provision of a more comprehensive explanation (in a consistent way) across these letters would likely have aided the panel's assessment and selection process.

Overall, the process evaluation found that efforts had clearly been made (despite the tight timescales imposed upon the Fund) to achieve a thorough and transparent process that was purposefully designed to encourage and then select the best possible opportunities for supporting Fund objectives. However, improvements could be made to any future iteration.

2.1.2 SPF established a portfolio of programmes aligned with Fund objectives

Following on from the bidding and selection process (above), SPF supported a portfolio of 34 programmes, with each co-ordinating a diverse range of R&I activities. The portfolio aligned well with the Fund's three objectives, as summarised below.

Identifying and selecting MIDRI programmes

All selected programmes were bid on the basis that they would address MIDRI, meaning this was embedded within the design and implementation from the start.

Most (28/34) selected programmes (82% of the total) were led by multiple Councils, while all programmes involved the participation from different types of stakeholders in their design, governance, and implementation. Across individual programme advisory groups, 274 individuals were involved including representatives of government departments, UKRI/Councils, PSREs, academia, industry, charities/Non-Governmental Organisations (NGOs), and cultural organisations.

Programmes have also brought together groups and individuals that might be considered 'non-traditional' participants in research and innovation activities (see examples below).



Examples of SPF programmes engaging with different communities

Adolescence, mental health & the developing mind: The Research and Stakeholder Advisory Board (RSAB) included government, academics, practitioners and third sector stakeholders. A young person's advisory group also fed into the RSAB.

Clean Air: Charitable/social enterprise organisations were more involved than was initially anticipated, in part due to the outreach activities of the programme Champion. There was also successful engagement between the programme and the health community, particularly with primary care and General Practitioners.

Modern Slavery and Human Rights Policy and Evidence Centre (MSPEC): A key objective was to build and sustain an inclusive 'network of networks' of producers and users of modern slavery research. The Advisory Board comprised representatives from academia, civil society, NGOs, the Home Office, international organisations, and independent members. The Centre also involved people with lived experiences of modern slavery in call processes, in projects and in discussions with policymakers.

Productivity Institute: The Productivity Institute established 8 Regional Productivity Forums, which brought together over 130 people from different sectors (including small and large businesses and policy makers) to ensure that the institute heard from different perspectives and understood the productivity challenges and opportunities of different sectors, roles and regions. This intelligence then helped drive the Institute's business innovation activities and research and engagement agenda.

Tackling multimorbidity at scale: Patient and public involvement experts were involved as proposal reviewers and panel members.

UK Centre for Evidence Implementation in Adult Social Care: Organisations in the voluntary, community and social enterprise sector, as well as people with lived experience of social care, were all involved in the call scoping and review process.

Source: Technopolis (2025). Case studies and programme lead template responses

➔ Findings on SPF driving an increase in MIDRI are presented in Section 2.3.

Identifying and selecting programmes that address government priorities

Most of the selected programmes (32/34) self-assessed in their bid as addressing government priorities and policy needs. As a result, 91% of SPF funding went to proposals involving a close partnership with a government department or agency (far surpassing the Treasury requirement of at least one-third of funding).

SPF also helped establish a novel process (in Wave 2) for engagement between Councils and government departments to identify, prioritise and co-create relevant programme ideas. As set out above, this involved a multi-step prioritisation process to identify and consolidate cross-departmental R&I priorities, resulting in a final list of 18 priority proposals (15 top priority, 5 second tier) that was taken into account in the selection process (with a 'prioritised bid' providing a strong rationale for selection). Of the 19 bids selected during the second Wave, 14 were on the CSA prioritised list.

Most programmes involved government departments in their design, governance and implementation. There were government departments as formal partners in 30 of the 34 SPF programmes, while 25 different departments and agencies were also involved across individual programme advisory boards.

Six DSIT-funded PSREs¹² (UKSA, UKAEA, NPL, NNL, the Met Office and GO-Science) were eligible to submit SPF programme proposals (as an unusual feature of SPF's design), and of the 34 programmes, 7 (21%) involved a PSRE as a lead/partner.¹³

→ Findings on SPF addressing government priorities are set out in Section 2.4.

Responding to strategic priorities and opportunities (agility)

SPF mainly (28/34) provided funding for medium scale programmes (£10m+), helping to address a gap in the funding system relating to larger, more complex projects.

It did so in between Spending Review allocations, at a time when R&I budgets (both of Councils and government departments) were reported to have been 'tight' and with existing funding mostly already committed, leaving limited room for new initiatives (at scale) to address emerging opportunities and priorities.

A key feature of this additional funding was that it represented 'neutral resources', i.e. not tied to a specific Council or government department's budget. This was a transitional enabler during UKRI's formation and was reported to have encouraged greater openness and flexibility, as well as facilitating the research system to address

¹² The PSREs are the UK Space Agency (UKSA), UK Atomic Energy Agency (UKAEA), National Physical Laboratory (NPL), National Nuclear Laboratory (NNL), Met Office and GO-Science.

¹³ A fifth programme (Quantum Sensors for Fundamental Physics) did originally include UKSA and NPL as partners, but UKSA was not involved after the business case and NPL were removed as a partner due to a conflict of interest.

problems/challenges that cross disciplinary boundaries. Councils reported being less proprietorial when developing and implementing SPF programmes, compared with business as usual, and more focused on supporting the best opportunities, rather than securing a share of the budget for their own purposes.

This at-scale and 'neutral' funding enabled the design of programmes that address complex challenges, involve multi-stakeholders and take different approaches.

There is a strong sense that SPF funding allowed councils to address opportunities that might otherwise have been missed, both because of a lack of funding (at scale) in the system, and also because the Fund (through its objectives and selection criteria, plus its stated intention to support larger programmes) provided additional impetus to look across Councils and work more closely with government. This in turn encouraged and enabled programme ideas that addressed emerging opportunities and more complex problems, and did so through a multi-stakeholder approach.

An example, taken from the case studies, is shown below, which demonstrates the influence of providing funding at a medium scale.



Benefits of addressing challenges via medium scale programmes – example

National Timing Centre (NTC) | Wave 2 | Lead: National Physical Laboratory (NPL)

The NTC was funded under the second wave of SPF. Its overall budget was £30.3m. Its key government stakeholder departments were the Ministry of Defence (MoD), BEIS and the Department for Transport (DfT). However, there were also 18 other partners involved. These organisations were known to each other before, with many working together on the existing Position, Navigation and Timing (PNT) working group. However, despite this, the interviewees still felt that in the absence of the SPF support, this type of research would not have proceeded at the time or pace that it has. This means that, without this SPF support, the UK's risk exposure to PNT services disruption, and the economic and national security consequences, would be greater.

Source: Technopolis (2025). case studies

The timing of SPF (between Spending Reviews, in a period of tight budgets) and the scale of funding, as well as the autonomy given to programmes, all meant that there was also potential for greater agility at the *programme* level (although this was not an explicit expectation of the Fund). The case studies prepared for the evaluation all include discussion of how programmes have evolved and adapted to changing needs and opportunities over their lifetime. Most commonly this has been in response to barriers and opportunities posed by COVID-19, but there are also examples of agility relating to changing user needs and priorities, and learning from early phases of implementation. One such example is shown below.

Programme agility – examples



Clean Air | Waves 1&2 | Leads: NERC and Met Office

The programme's adaptability is demonstrated by its ability to shift priorities over time. For example, the programme increased its emphasis on indoor air quality, aligning with a broader shift among researchers and policymakers towards integrating indoor and outdoor air quality as part of a comprehensive strategy. The programme also adapted to technological changes and societal needs, expanding its focus to also include alternative fuels, as well as increasingly recognised pollution factors like tyre and brake wear.



Modern Slavery and Human Rights Policy and Evidence Centre | Wave 2 | Lead: Arts and Humanities Research Council (AHRC)

The programme shifted its approach in response to early learning. This included an increase in the PEC's in-house research capacity and a strengthening of links across its consortium partnership, in recognition of challenges identified around producing evidence that can respond in a timely manner to rapidly evolving policymaker needs. Greater in-house research capacity positioned the PEC to be able to produce research outputs more rapidly and flexibly, ensuring it can speak directly to emerging political priorities.



Productivity Institute | Wave 2 | Lead: Economic & Social Research Council (ESRC)

Developments (e.g. the pandemic, geopolitical conflicts, the energy crisis and rising inflation) meant that the macro environment became very different from when the programme was launched. The Institute was responsive to this changing context, e.g. by conducting research on the impact of COVID-19 on productivity. The Productivity Institute also shifted its approach to research from 'bottom up' to a more directed and focused approach with the aim of optimally engaging with business and policy makers. The Executive Team identified 7–8 specific programmes that would be developed over subsequent years. It also recognised a demand for short-term flexible projects that could respond to specific business needs. For this, they developed 'Innovation Sandpits'; short (2 week) collaborations between researchers and businesses to identify and solve a specific problem.

Source: Technopolis (2025). Case studies

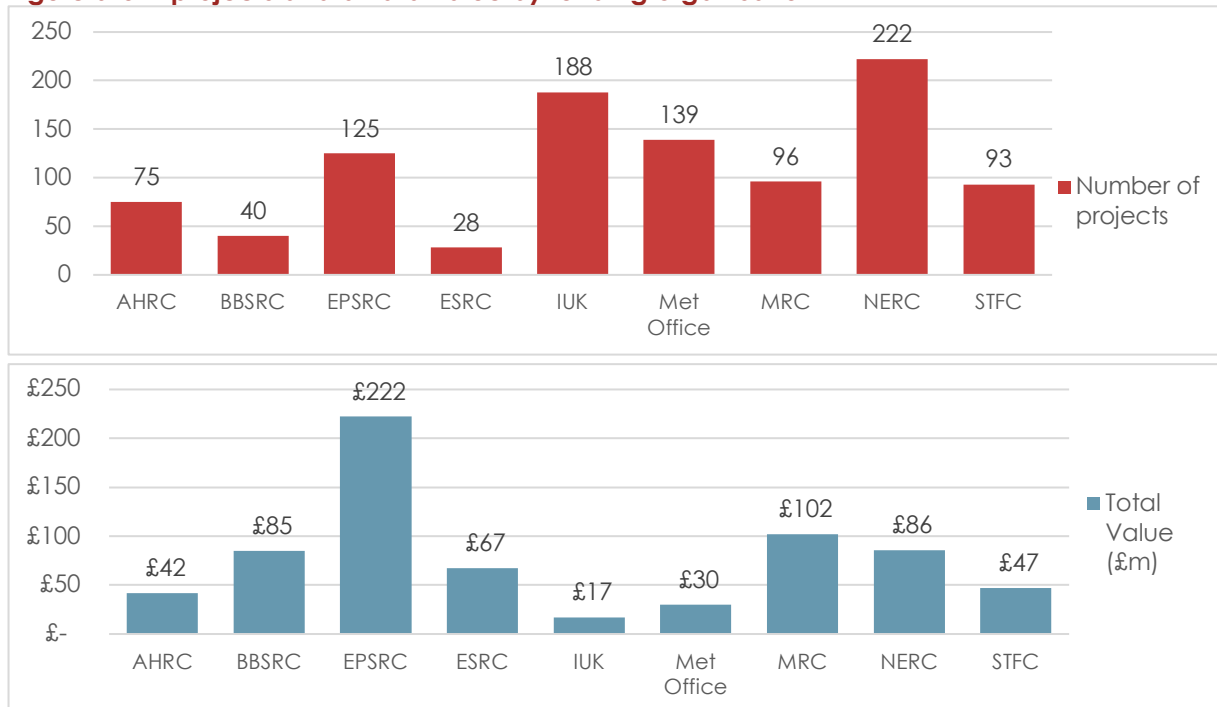
2.2 SPF programmes and projects have progressed considerably in the delivery of R&I outputs

We present below a high-level view of R&I outputs across the entire SPF portfolio, while Section 2.3.6 showcases the degree of multidisciplinary of outputs, and Section 2.4.7 provides evidence of the use of outputs by policy makers.

SPF has supported 34 programmes, which have gone on to support 1,006 individual projects, as of May 2025 (as well as other investments). This is a ~50% increase on the 767 SPF projects identified at the interim evaluation stage (June 2022).

SPF projects include 670 research grants, 8 fellowships and 1 training grant awarded by Research Councils, plus 188 Innovate UK projects, and 139 Met Office grants. They have a total award value of £697m, with an average of £693k per project.¹⁴ The figure below shows the distribution of projects and value across funding organisations.

Figure 6 SPF projects and award value by funding organisation



Source: Grant information provided by UKRI, May 2025.

SPF programmes (and projects) have progressed considerably in the delivery of R&I outputs. Individual programme evaluations are collecting more granular evidence on the nature and characteristics of those outputs, but in this sub-section we present

¹⁴ Note that this is lower than the value of the Fund as programmes allocated resources to other investments beyond grants (e.g. research infrastructure).

an overview of ten types of outputs as reported in Researchfish¹⁵ (to December 2025), which allows us to arrive to a systematic Fund level view across the full portfolio.

The table below shows the number of grants reporting each type of output, along with the total number of each output reported by these grants. For instance, there are 531 SPF grants that have so far reported one or more publications, with 7,077 publications reported in total. The average number of each output produced per grant is also shown (based on all relevant grants).

Table 1 R&I outputs emerging from SPF (research council) projects

	Number of SPF Grants reporting this output	Number of outputs reported	Average per SPF grant (all) ¹⁶
Publication	531	7,077	10.64
Policy	185	1,024	1.54
Further funding	281	972	1.46
Research database and model	180	602	0.91
Research material	105	206	0.31
Artistic and creative product	103	298	0.45
Software and technical product	101	231	0.35
Intellectual Property	13	18	0.03
Spin out	10	12	0.02
Medical devices, product interventions and clinical trials	6	12	0.02

Source: Researchfish (December 2025). Outputs reported by SPF (research council) awards.

SPF results have then been benchmarked against all other UKRI grants from the same period (i.e. awards starting between 2018 and 2024, excluding SPF grants) (see first three columns of Table 2). Since 93% of SPF grants started between 2019 and 2022 (inclusive), we also repeated the analysis, but restricting the timeframe for both SPF and the UKRI benchmark to this shorter period (see final columns in Table 2).

The number of outputs per £1m invested in the portfolio (i.e. across all awards, regardless of whether or not they have reported outputs) is used to ensure

¹⁵ Researchfish provides comparable information across all grants funded by UKRI (at least those funded by the Research Councils). Researchers are invited to add their outputs to Researchfish, and some may decide not to do so or not to provide complete information. There is no evidence that would allow one to firmly conclude on the completeness of Researchfish, however, even if researchers do not report all outputs, we do not expect this to be a higher or lesser problem with SPF in comparison with the UKRI portfolio more generally.

¹⁶ The denominator here is all SPF awards from research councils that could be identified within GtR, regardless of whether they have reported any of the ten outputs. There were 679 SPF awards from research councils in total, of which 665 could be identified in GtR. 582 of these (88%) have reported one or more of the ten output listed.

comparability between the populations. Both cohorts (SPF and UKRI) include grants that are closed and ongoing (i.e. different stages should not affect results), as well as a variety of type of grants. Results however are indicative as the composition of the portfolio is not identical in terms of size of grants or disciplinary composition. Nonetheless this is a useful exercise in so far it helps to calibrate if SPF is delivering or not in excess to other sources of UKRI funding (at least in terms of volume).

The assessment shows that SPF projects are generating most types of output at a rate that is above the overall UKRI portfolio. This is despite the complex nature of research carried out in SPF, including the involvement of different disciplines and stakeholders (which might be expected to reduce or delay production). Reported contributions to influencing public policy is particularly high (more than double the UKRI rate).

Publications per £m invested is the one area where the performance of SPF grants is not significantly higher than the wider UKRI portfolio (in fact it is lower for the full 2018–2024 period, although this is likely less representative of SPF). Other results in the table and evidence from programme case studies indicates that SPF programmes may have prioritised other types of outputs, such as policy briefs and synthesis reports to communicate their results to policymakers (as showcased in examples below), which may explain a reduced focus on other publications. This prioritisation goes in line with the objectives of SPF (i.e. of producing evidence that can inform policy decisions).

Table 2 R&I outputs emerging from SPF and UKRI projects, per £m invested

R&I outputs	All grants starting 2018–2024	All grants starting 2018–2024	Grants starting 2019–2022	Grants starting 2019–2022
	SPF per £m	UKRI per £m	SPF per £m	UKRI per £m
Publications	11.01	14.64	11.47	10.95
Influences on Policy and Practice	1.59	0.75	1.78	0.64
Further funding	1.51	1.22	1.61	0.94
Research databases and models	0.94	0.82	0.88	0.56
Research tools and methods	0.32	0.29	0.28	0.24
Artistic and creative products	0.46	0.31	0.52	0.28
Software and technical products	0.36	0.21	0.34	0.15
Intellectual Property	*	*	*	*
Spin outs	*	*	*	*
Medical products, inventions and clinical trials	*	*	*	*

Source: Researchfish (December 2025). Outputs reported by (research council) awards, compared with total investment in research council awards identified in Gateway to Research (GtR). The total investment figure used for SPF awards is £643m (and £556m for those starting 2019–2022) and for non-SPF UKRI awards is £17.5bn (and £9.5bn). * cells where numbers were very small (<0.1).

Outputs for policy makers

Ensuring the Security of Digital Technologies at the Periphery | Wave 1 | EPSRC



The programme has put in place 4 synthesis fellows, academics who work across the projects to identify common learning and what can be fed into government policy or practice in industry. They are responsible for collating and disseminating findings from studies to the programme partners, including industry and government. They organised an online database of all research outputs, which are now available on the PETRAS website, and organise knowledge exchange events. Multiple stakeholders reported that the research undertaken and the outputs produced supported government priorities. For instance, researchers from the PETRAS programme worked closely with the IoT-1 Committee of the British Standards Institution (BSI) to inform the development of standards for IoT security, privacy and interoperability, and to understand the needs and concerns of SMEs operating in the IoT space.

Modern Slavery and Human Rights Policy and Evidence Centre | Wave 2 | Lead: Arts and Humanities Research Council (AHRC)



In addition to academic publications, results from funded projects and the in-house research conducted by the consortium members are published in research summaries, interim outputs, policy briefs, blog posts and podcasts. All research teams are asked to co-produce shorter research summaries with the MSPEC team to synthesise findings and make them more accessible to different stakeholders.

Policy briefs are particularly tailored for the use of policymakers – not only synthesising research and evidence, but also rating the quality of the evidence, and where relevant, making specific recommendations. The Centre has published policy briefs¹⁷ on topics such as survivor support, the impact of COVID-19 on modern slavery, and the effectiveness of forced labour import bans. In addition, the MSPEC has made three written submissions to public consultations¹⁸ based on the findings and evidence in funded projects. For example, for the Director of Labour Market Enforcement call for evidence on the Labour Market Enforcement Strategy,¹⁹ the Centre's submission drew on findings from a research project on the experiences of Romanian and Bulgarian workers in the UK agriculture industry during the pandemic (among others).

Source: Technopolis (2025). Case studies

¹⁷ <https://modernslaverypec.org/resources?type=briefing>

¹⁸ <https://modernslaverypec.org/resources?type=submission>

¹⁹ <https://modernslaverypec.org/assets/downloads/Modern-Slavery-PEC-response-to-DLME-Call-for-Evidence-23-24.pdf>

Finally, it is worth noting that although the volume of SPF publications (per £m) is similar to that of UKRI (or lower, depending on the time period analysed), they have had a higher citation impact (measured by Field Weighted Citation Score, FWCS) in the academic literature, on average, than other UK or UKRI papers in the same period (1.65 versus 1.34 and 1.53, respectively). The FWCS of papers from SPF is also higher than for papers produced by the same researchers prior to SPF (1.59). These differences are statistically significant (95% confidence interval).

2.3 SPF has helped to drive an increase in MIDRI (of high quality), from applications to research and publications, and synthesis and dissemination

One SPF objective was to drive an increase in high quality MIDRI. Multidisciplinary R&I involves different disciplines working independently on a common problem or question, while interdisciplinary R&I involves disciplines interacting and working collaboratively from the onset.

There is strong consensus amongst those involved in SPF that the Fund is supporting programmes that address complex and multi-faceted challenges that it would be difficult to fund and address via other means. Tackling those complex challenges requires, in many cases, a multi or interdisciplinary perspective that other funding routes are often not well suited for. The 'neutral' resources offered through SPF facilitate this crossing of boundaries, while the scale of funding on offer has been a key enabler to implement a multi- and inter-disciplinary approach.

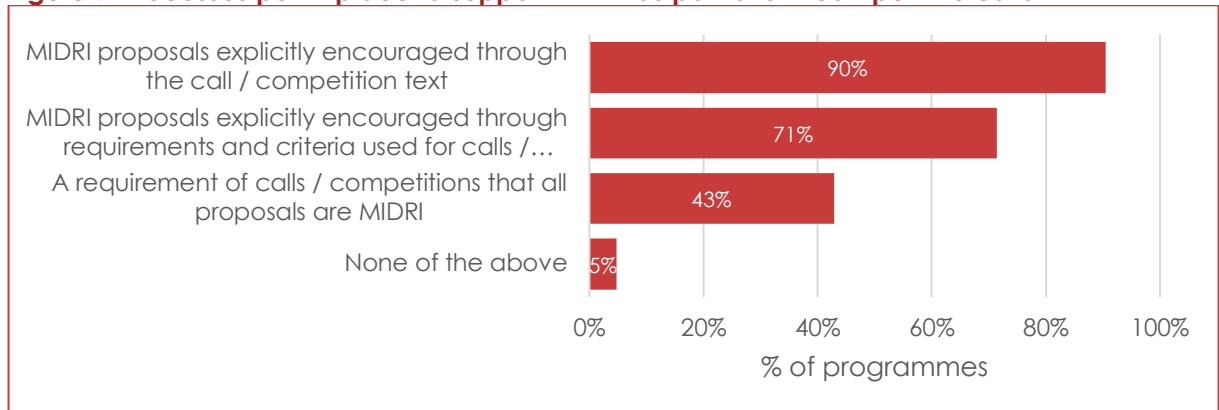
Based on the analytical framework described in Section 1.2, we have explored how SPF has supported MIDRI within programmes, from applications to research and publications, and synthesis and dissemination (to enable uptake).

In line with SPF objectives, most programmes put in place mechanisms or actions to de-risk and assess MIDRI proposals. In most cases these built upon existing mechanisms used by the Councils to identify high quality MIDRI proposals, rather than representing new approaches and methods. This use of MIDRI-related actions is linked to SPF in so far as funding was made available for programmes intended to support MIDRI, with councils retaining autonomy as to how best to execute this. It has also been enabled by the focus on supporting programmes that address cross-departmental priorities, which has subsequently embedded the participation of different stakeholders at the design stage, in the shaping of research agendas, and selection process, further enhancing the MIDRI perspective.

2.3.1 SPF programmes have actively encouraged MIDRI applications via various means

There have been widespread efforts across the SPF portfolio to encourage MIDRI proposals. Of the 24 programmes that provided us with information for the interim impact evaluation, 21 had launched competitive calls. Nearly all of these had explicitly encouraged MIDRI proposals within the call text, or through the requirements and criteria used (90% had done one or the other, or both). In fact, nearly half (43%) of the programmes had made MIDRI a *requirement* of funding. For example, a call from the Transforming UK Food Systems programme specified that ‘research must be interdisciplinary and join up healthy and accessible diets, with sustainable food production and supply ... Proposals that do not will be rejected’.

Figure 7 Processes put in place to support MIDRI as part of SPF competitive calls



Source: Technopolis, based on responses to interim evaluation, 2022. Responses from 21 leads of SPF programmes that have run competitive calls.

Beyond the call text and requirements, SPF programmes also reported a range of other activities that they have undertaken to support and encourage MIDRI proposals, including:

- pre-programme events to bring different disciplines together before bidding
- workshops during the application and assessment process to look for further opportunities to bring teams together
- two-stage grants, with the first phase specifically intended to explore and test the MIDRI approach and collaboration
- knowledge exchange coordinators within grants, who come together regularly to identify areas for future collaboration across teams

The case studies developed for this evaluation provide a deeper exploration of the approaches taken to encourage MIDRI applications in a range of programmes. Below, we provide an example of the efforts taken within one of these.



Efforts to encourage MIDRI applications – example

Adolescence, Mental Health and the Developing Mind (AMHDM) | Wave 2 | Lead: Medical Research Council (MRC)

The programme has supported a MIDRI approach through the design of its calls, which were informed by all three Councils and the Research & Stakeholder Advisory Board to ensure these were developed with different disciplines in mind and so that they would be applicable and appropriate to a wider group. The calls clearly stated that all three Councils were involved, which was key for encouraging bidders who would not otherwise engage in MRC calls.

The documentation for the call included multiple references to MIDRI, for example: 'We welcome applications that draw in non-traditional disciplines to mental health research or combine disciplines or sub-disciplines that have not traditionally collaborated, in order to provide novel insights and approaches. It is expected that programmes will demonstrate structural and intellectual integration of all work packages (no matter the leading discipline in those work packages), such that interdisciplinarity clearly adds value to the research as a whole'.

The programme team also delivered a webinar in which they promoted a MIDRI approach, supplied a frequently asked questions document that included a response on the level of interdisciplinarity expected, and supported the development of MIDRI research teams. The programme was clear that successful proposals would demonstrate the value of a MIDRI approach and avoid tokenism.

Interviewees noted that the requirement for a MIDRI approach was more explicit for this programme than previous calls they had been involved in, though they have historically supported MIDRI teams and projects. One interviewee noted that the incentivisation for people to come together early is a significant shift and enabled teams to be more creative, which in turn, added value to the programme.

Given the nature of mental health research (i.e. the nature vs nurture debate), the research community was open and responsive to using a MIDRI approach. One interviewee described how proposal teams were brought together through a shared interest in understanding the interplay of various aspects in young people's lives. Teams developed in different ways – for example, some individuals with existing relationships added to their consortium, while others formed more equal partnerships.

Source: Technopolis (2025). AMHDM case study

Councils made clear to the study team that encouraging MIDRI proposals is not new or unique to SPF. However, the majority of funding elsewhere was single-Council, while even cross-Council initiatives can be limited by a lack of neutral funding (within SPF, neutral funding – i.e. not tied to a specific Council or government department budget – was found to reduce concerns about the balance of funding going to different communities). The feedback from programme leads does suggest that SPF has expanded efforts to encourage MIDRI, and stimulated councils to make this a stronger request (or requirement) within calls.

2.3.2 SPF efforts have contributed to a high proportion of MIDRI applications, but in line with wider UKRI activities

Efforts taken within SPF programmes to encourage MIDRI proposals were largely successful. At the interim evaluation stage, of the 19 leads of SPF programmes that had received MIDRI proposals to calls (and responded to our questionnaire), more than half (58%) reported attracting *more* MIDRI proposals than is usual, while two-thirds (68%) reported attracting a sufficient number that were of high quality. In general, those involved in managing SPF programmes were positive about the response to efforts to encourage MIDRI teams/projects. An example is given below.



Successfully encouraging applications – example

Clean Air | Wave 1&2 | Lead: NERC and Met Office

It was noted in interviews with programme stakeholders that there was no systematic approach towards embedding MIDRI across the programme, and it was often left to the interpretation of partners, research or project teams. However, from the received applications it was possible to see that this encouragement for MIDRI permeated through. As an example, there was a consortium between public health academics and an architect collaborating on the delivery of a research project. Similarly, business-led projects have included health expertise from the outset, while others have included usability expertise (end-users) within the social sciences project team, bringing different perspectives into the feasibility and prototype design

Source: Technopolis (2025). Clean Air case study

Analysis of application data supports the idea that UKRI has been active in encouraging MIDRI applications via other means as well (not just through SPF). This analysis, undertaken at the interim evaluation stage (March 2023), looked at the proportion of applications to SPF programmes that included two or more Fields of Research (FoRs),²⁰ as a broad indicator of the level of MIDRI proposal activity that is being generated within the Fund. Note that this ‘simplistic’ approach needs to be taken with some caution as it does not account for the *distance* between the fields (i.e. the extent to which they have collaborated historically), the diversity of the teams’ academic backgrounds, or the diversity of the knowledge they bring to bear in their projects. These are tackled in our bibliometric approach to assessing the MIDRI-ness of project teams and outputs (see Sections 2.3.4 and 2.3.6).

²⁰ Based on 22 high-level Fields of Research that Dimensions uses and to which UKRI grant applications are mapped and using the 2020 Australian and New Zealand Standard Research Classification.

The FoR analysis suggested that nearly half of applications to SPF programmes could be classified as MIDRI (46%, or 1,320 of 2,892).²¹ This is only slightly higher than seen across UKRI, outside of SPF, during the same period (44%). However, there is variation, with higher proportions of SPF applications classified as MIDRI in some areas (see Table 3). For example, 74% of SPF applications tagged against biomedical and clinical sciences were also tagged against other FoRs, while this was true of only 57% of UKRI applications tagged to this field.

A more stringent test looking at the proportion of applications tagged to three or more FoRs reduced the percentages considerably (3.5% for SPF, 4.4% for UKRI), with SPF slightly below UKRI. Applications with this breadth of disciplines are therefore very rare (within SPF and beyond it).

Table 3 Number of SPF and UKRI applications by FoR, and % also tagged to other FoRs

Fields of Research	UKRI applications tagged to this FoR	% also tagged to other FoR(s) (=MIDRI)	SPF applications tagged to this FoR	% also tagged to other FoR(s) (=MIDRI)
49 Mathematical Sciences	1,097	58%	11	91%
32 Biomedical and Clinical Sciences	17,513	57%	313	74%
50 Philosophy and Religious Studies	1,395	81%	24	96%
40 Engineering	11,967	67%	223	81%
44 Human Society	9,340	65%	340	79%
39 Education	1,684	54%	34	68%
47 Language, Communication & Culture	3,137	83%	21	95%
48 Law and Legal Studies	2,340	81%	177	88%
37 Earth Sciences	4,451	48%	217	55%
38 Economics	855	85%	69	91%
52 Psychology	2,277	75%	65	77%
34 Chemical Sciences	4,226	76%	13	77%
31 Biological Sciences	14,664	63%	249	63%
30 Agriculture, Veterinary, Food Science	3,823	72%	182	71%
33 Built Environment and Design	2,429	81%	116	79%
41 Environmental Sciences	5,102	73%	702	66%
42 Health Sciences	8,172	72%	441	66%
43 History, Heritage and Archaeology	2,531	68%	78	60%
35 Commerce, Mgt. Tourism and Services	2,844	78%	133	68%
46 Information and Computing Sciences	8,052	60%	396	48%
51 Physical Sciences	6,401	48%	281	35%
36 Creative Arts and Writing	3,021	71%	59	58%

Source: Technopolis, based on UKRI data on SPF and other UKRI applications, March 2023. Grey cells indicate SPF or UKRI proportion is larger, with the darker shade indicating a bigger difference. Note applications can be tagged to multiple FoRs.

²¹ This analysis excluded grants that not tagged to a field of research (including all IUK grants).

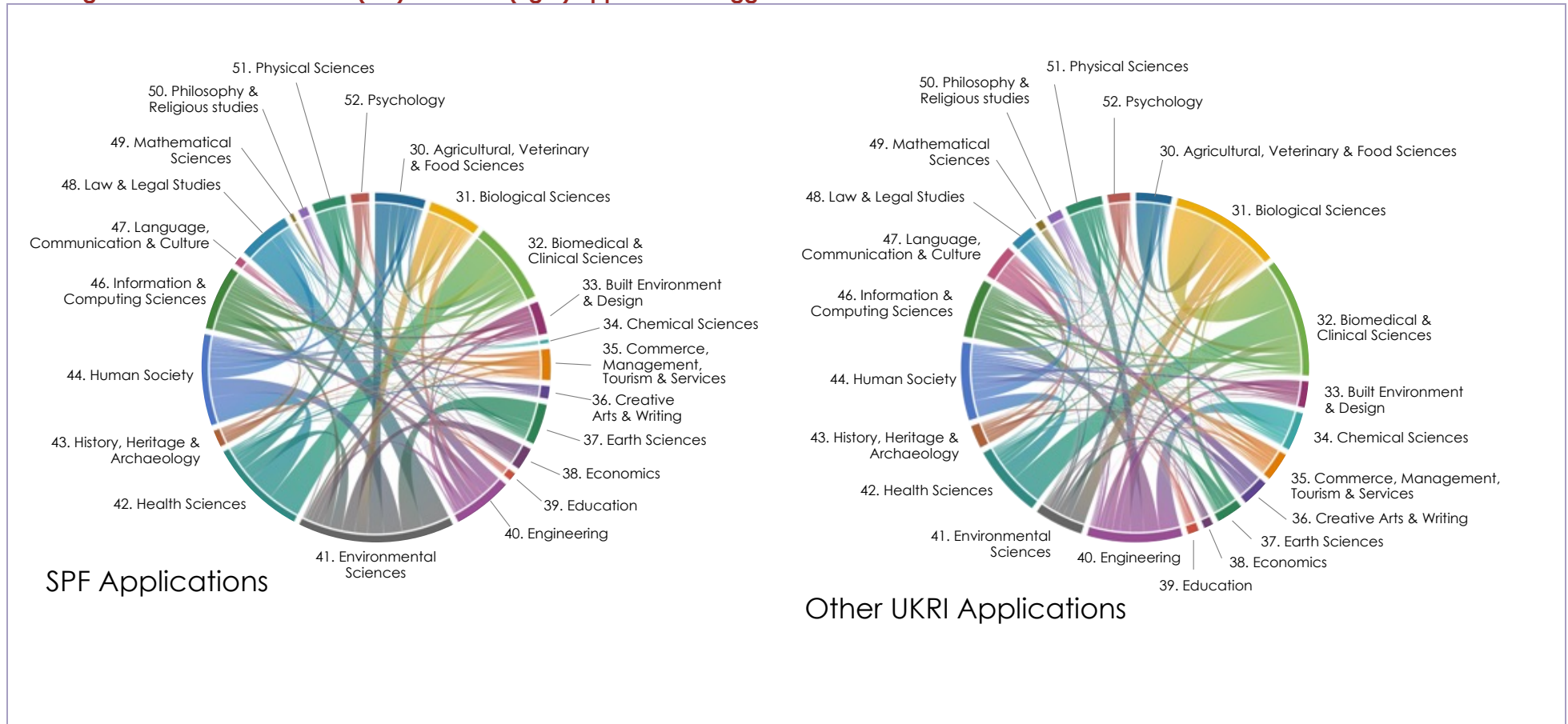
Figure 8 (left-hand) presents a visual summary of the different 'pairings' between fields that occur within SPF applications, based on tagging of grants against FoRs. (Pairings for other UKRI applications is shown on the right for comparison).

The figure shows a wide variety of different interlinkages between different disciplines, with the most common within SPF applications being:

- Health Sciences < – > Biomedical & Clinical Sciences (109 applications)
- Law & Legal Studies < – > Environmental Sciences (88 applications)
- Human Society < – > Health Sciences (72 applications)
- Earth Sciences < – > Environmental Sciences (72 applications)
- Human Society < – > Environmental Sciences (63 applications)

These pairings suggest that in many cases the disciplines coming together for SPF proposals may already have long-standing experience of collaboration and consequently are not too 'distant' from one another. This is further tested with bibliometric data later in Section 2.3.4 (looking at the composition of SPF teams).

Figure 8 Visualisation of SPF (left) and UKRI (right) applications tagged to two different Fields of Research

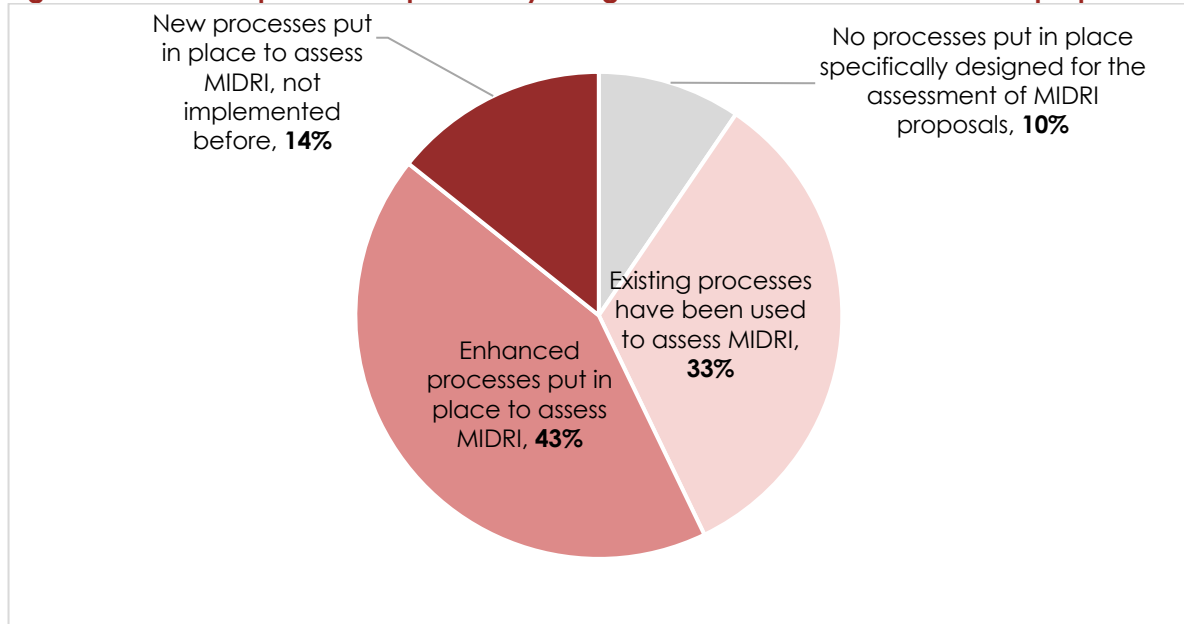


Source: Technopolis, based on UKRI data on SPF & other UKRI applications, March 2023. Only applications tagged to 2 or more FoRs are shown (n=1,320 SPF applications and 36,346 UKRI applications). An application may appear more than once (i.e. represented by more than one line), where it is tagged against 3+ FoRs (and therefore has 2+ bilateral links).

2.3.3 A majority of SPF programmes have employed new or enhanced processes to assess MIDRI

When it comes to the assessment of competitive calls and competitions, nearly all SPF programmes (90%) put in place processes specifically designed for the assessment of MIDRI. This includes more than half (57%) that employed *new or enhanced* processes (Figure 9).

Figure 9 The use of processes specifically designed for the assessment of MIDRI proposals



Source: Technopolis, based on responses to interim evaluation (2022) from 21 leads that had run competitive calls. Note, some indicated a mixture of new, enhanced or existing processes at different stages. The figure shows only the most different to business-as-usual position

Commonly, the MIDRI-specific processes have involved one or more of the following:

Example of enhanced mechanisms to assess MIDRI applications



Ensuring a mixture of disciplines are represented amongst reviewers and panels.

Example: Each proposal was reviewed by a mix of natural science and socio-economic reviewers, and the panel consisted of a mixture of members across all relevant disciplines with introducers from across the disciplines assigned to each proposal. (Sustainable Management of UK Marine Resources programme)

The inclusion of MIDRI-specific assessors amongst reviewers and panels



Example: The programme sought to appoint panel members with an appreciation of MIDRI research (not just experts from different disciplines). This was in recognition of MIDRI applications being at the interface of disciplines, and that is where the novelty lies. This was a shift from past approaches (to MIDRI), where the focus was on having discipline experts reviewing sections of a proposal and assessing the proposal on its merit against their discipline of expertise. (Clean Air programme)



Specific criteria and guidance for the assessment of MIDRI proposals

Example: The guidance to reviewers stated: 'Use your expert knowledge in your area to comment on the assumptions, methodologies and feasibilities set out in the proposal, however please also try to judge the project as a whole and the transformation it is trying to achieve, recognising that interdisciplinary proposals do not necessarily need to be world-leading and/or excellent in every discipline to be excellent as a whole and/or to have impact'. (Transforming UK Food Systems)

Source: Technopolis (2025). Case studies and programme lead template responses

These additional and enhanced efforts have not come without challenges. Leads identified a number of issues and difficulties faced in implementing processes to effectively and efficiently assess MIDRI, which can be summarised into three areas:

Finding reviewers: Finding sufficient MIDRI assessment specialists or reviewers with MIDRI experience. Linked to this is an issue of potential reviewers declining to contribute because they are not experts in *all* relevant fields (suggesting a need for explicit clarifications when approaching individuals, such as that presented above).

Assessing MIDRI-ness: Identification of appropriate and genuine indicators of MIDRI (e.g. defining where one discipline ends/starts and therefore whether/the extent of MIDRI in a proposal) or achieving consensus on what a strong MIDRI proposal looks like. Also, assessing at the proposal stage if true interdisciplinary partnerships have been established – or whether bids are just framed as interdisciplinary without establishing genuine partnerships.

Efficiency of process: Larger panels (covering multiple disciplines) ensure fully informed decisions but can be less efficient at ranking and recommendations.

2.3.4 The multidisciplinary and intersectoral nature of SPF programmes has flowed through to topics covered in SPF projects and the composition of research teams

As noted above, analysis of data (and feedback from programme leads) suggests a high rate of (good quality) MIDRI applications within SPF programmes. This has then translated into a high degree of MIDRI-ness among the projects that were funded. Indeed, at the interim evaluation stage 87% of programme leads said that their programme 'to a large extent' or 'entirely' involved disciplines that do not tend to work together (n=24). Nearly all (96% of) programme Advisory Board members (surveyed for the final evaluation) reported the same.

We have also used bibliometric data and information from GtR to explore the extent to which SPF supported MIDRI at the project level in terms of bringing together researchers from different disciplines to collaborate. The approach, which focuses on the disciplinary background of researchers, rather than the topics covered in the research projects, is explained below.

Indicators used to assess the disciplinary diversity of SPF projects

We combined an analysis of GtR with bibliometric data to arrive to an estimate of the disciplinary diversity of SPF research projects. This approach involves assessing the diversity of disciplinary backgrounds in a project, by analysing the prior publication profile (in Scopus) of the researchers listed as participants in that project in GtR.

The Multidisciplinarity Index (MI) is used to measure the diversity of the co-participants' disciplinary background, which aims to capture the collaborative aspect in cross-disciplinary research. Specifically, it captures the average multidisciplinarity of publications linked to a given group or entity. Multidisciplinarity at project level was normalised using paper-level multidisciplinarity in the relevant subfields (considering the subfields of the projects' papers) using the world level as a reference (i.e. the whole of Scopus provides the value of 1).

(Note that one underlying assumption is that a project's list of co-applicants in GtR is comprehensive, or at least representative of the research team).

Using this approach, we found a high degree of multidisciplinarity (based on participants' disciplinary background) in many SPF projects, in particular those funded through the following programmes, which include projects that are 2.5 to 7.3 times the world average (=1).²²

- Quantum Technologies for Fundamental Physics
- Transforming UK Food Systems
- Clean Air: Future Challenges
- Constructing a Digital Environment
- Harnessing Exascale Computing (ExCALIBUR)
- UK Climate Resilience
- Greenhouse Gas Removal
- National Interdisciplinary Circular Economy Research
- Physics of Life
- Towards a National Collection
- Trustworthy Autonomous Systems

²² Note that some of the most multidisciplinary SPF projects relate to the programme 'Quantum Technologies for Fundamental Physics'. This is probably because multidisciplinarity may not be very present in other projects classified in the same GtR research topics (e.g. Condensed Matter Physics, Direct Dark Matter Detection, Cosmology.) As a result, projects in these subjects may be able to reach higher disciplinary scores after the normalisation process (as detailed above) compared, for example, with projects in other topics where disciplinary research is more frequent. It illustrates the relevance of the normalisation procedures to compute scores so research projects can have their multidisciplinary levels assessed against the reference provided by other projects in similar topics.

Note that the index has not been expanded to provide an aggregate value (for SPF overall) because of the relatively a limited proportion of SPF projects that can be included within the analysis (260 out of 852 grants in GtR).²³

Table 4 Multidisciplinary of selected SPF projects (Top 20 based on MI)

Project Title	Programme	MI of research teams	Number of researchers in Scopus
Quantum Sensing for the Hidden Sector	Quantum Technologies for Fundamental Physics (QTFP)	7.3	7
Determination of Absolute Neutrino Mass Using Quantum Technologies	QTFP	4.9	3
FPGA Testbed	Harnessing Exascale Computing (ExCALIBUR)	4.3	5
Smart Systems Approaches for Climate Resilient Livestock Production	UK Climate Resilience	4.0	9
A UK Atom Interferometer Observatory and Network	QTFP	3.6	3
A network of clocks for measuring the stability of fundamental constants	QTFP	3.5	9
Assuring Responsibility for Trustworthy Autonomous Systems	Trustworthy Autonomous Systems	3.3	5
Health assessment across biological length scales for personal pollution exposure and its mitigation (INHALE)	Physics of Life	3.1	8
Transformations to Regenerative Food Systems	Transforming the UK food system (TUFS)	3.0	14
'Unpath'd Waters': Marine and Maritime Collections in the UK	Towards a National Collection	2.8	24
OpenGHG: A community platform for greenhouse gas data science	Constructing a Digital Environment (CDE)	2.8	6
SENSUM: Smart SENSing of landscapes Undergoing hazardous hydrogeological Movement	CDE	2.8	8
An ExCALIBUR Multigrid Solver Toolbox for ExaHyPE	(ExCALIBUR	2.8	4
Quantum Sensing for the Hidden Sector (QSHS)	QTFP	2.8	3
UKRI Interdisciplinary Circular Economy Centre for Technology Metals (Met4Tech)	National Interdisciplinary Circular Economy Research Programme	2.7	23
Quantum Simulators for Fundamental Physics	QTFP	2.7	4
Healthy soil, Healthy food, Healthy people (H3)	TUFS	2.6	29
GGR Directorate CO2RE Hub	Greenhouse Gas Removal	2.6	18
Relating Environment-use Scenarios in Pregnancy/Infanthood and Resulting airborne material Exposures to child health outcomes (RESPIRE)	Clean Air: Future Challenges (CA-FC)	2.6	20
Hazard Identification Platform to Assess the Health Impacts from Indoor and Outdoor Air Pollutant Exposures, through Mechanistic Toxicology	CA-FC	2.6	3
Mobilising Adaptation: Governance of Infrastructure through Coproduction (Topic B)	UK Climate Resilience	2.6	11
Co-production of healthy, sustainable food systems for disadvantaged communities	TUFS	2.6	21

Source: Computed by Science-Metrix using Scopus and GtR data (2025). Shading (light to dark green) is just a visual aid to identify lowest to highest results.

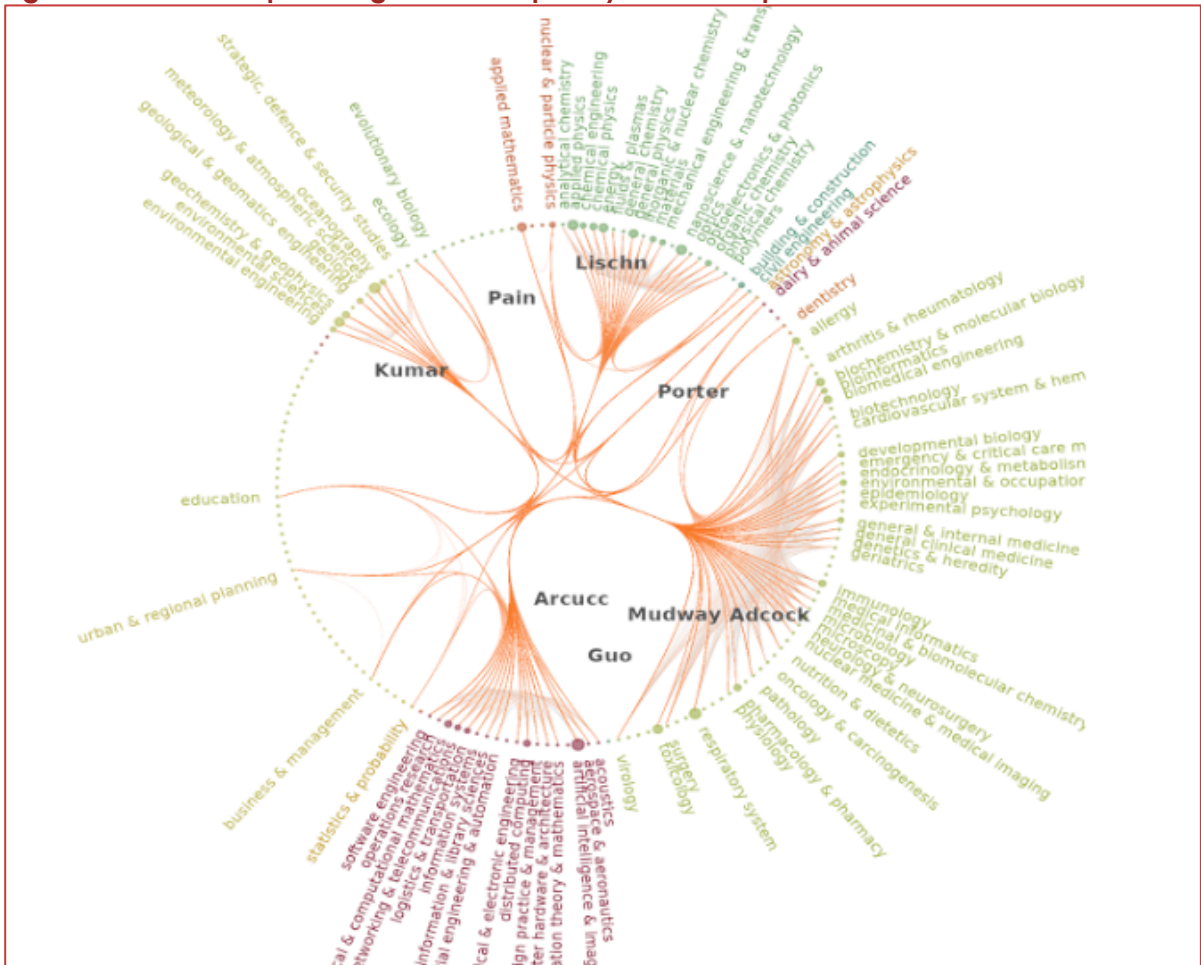
²³ This is mainly because the analysis draws comparisons between the composition of teams across GtR data, where many projects only include one researcher. To improve comparability we only focus on projects (both in SPF and GtR) that included at least 3 researchers and for which information on researchers is found in Scopus.

As a mode of example, Figure 10 represents the multidisciplinary of the research team from a project funded through the Physics for Life programme.

The most common subfields in prior publications from the researchers in this project are represented around the edge of the main circle. Researchers are then positioned inside the main circle close to subfields of their prior publications. For example, Kumar has most past publications in 'Meteorology & Atmospheric Sciences', Adcock in 'Respiratory Systems', Guo in 'AI and Image Processing', and Lischner in 'Applied Physics'.

Researchers with a publication background that is not so concentrated in a single subfield are positioned more towards the centre of the circle (e.g. Arcucci or Porter). This showcases that this team is composed of researchers with backgrounds distributed in many fields of research that are not otherwise found together in peer-reviewed publications, resulting in a multidisciplinary index of 3.1 (210% higher than other comparable research teams).

Figure 10 Example of high multidisciplinary team composition



Source: Computed by Science-Metrix using Scopus and GtR data (2025)



The case studies developed for this evaluation, as well as the meta-analysis of individual programme-level evaluations has provided other qualitative snapshots of the range of disciplines that have been brought together in SPF programme to address particular challenges. Some of these examples are highlighted below.

The MIDRI composition of SPF research teams – examples

Artificial Intelligence (AI) for Science and Government | Wave 1 | Lead: EPSRC

The programme has supported collaboration between The Alan Turing Institute and 235 unique organisations, including other research organisations (36%), public sector (29%), industry partners (19%) and charities/non-profits (14%). These partners are most often based in the UK (58%) but are otherwise distributed across the globe.

Source: Technopolis, *AI for Science and Government Review: Final Report, June 2023*.



Ensuring the security of digital technologies at the periphery (SDTaP) | Wave 1 | Lead EPSRC

The funded projects involve collaboration between a wide range of disciplines, including data science, law, physical sciences, social sciences, psychology, engineering, computer science, design, and the arts. Some of the technical fields such as engineering and computer science have experience of working together in the field of Internet of Things. However, the challenges that SDTaP seeks to address, which include issues of data protection, privacy, online safety and regulation, an understanding of human behaviour, and projections about the future, require the contribution of other fields of knowledge that do not tend to work together.

The problems explored in the projects are unique in the sense that they are neither purely technical nor purely behavioural, but socio-technical. This demands a strong network of experts from various fields to address the complexity. The size of the SPF funding enabled the lead Centre to partner with more institutions and across more disciplines, which impacted positively on their capacity to address more complex and multi-faceted challenges than would normally be the case.

An example of this would be the Living Room of the Future exhibitions that were installed at the Tate Modern and the Victoria & Albert museums.²⁴ This exhibition emulated a living room where several appliances are connected to the Internet and to each other (some technically possible, others products of artists' imagination). The exhibition also collected information on how people would use and understand the implications of those technologies. This example shows the incorporation of site design fiction into technical projects in partnership with behavioural sciences, demonstrating the high-level of coordination between different fields of knowledge.

Source: Technopolis (2025). *SDTaP case study*.

²⁴ <https://imagination.lancaster.ac.uk/update/living-room-of-the-future-at-tate-modern/>



ExCALIBUR | Wave 2 | Lead Council: EPSRC

ExCALIBUR has brought together over 250 scientists, academics and professionals from 114 organisations in the UK and around the globe. The principles of separation of concerns and co-design underpinning the design and delivery of high priority use cases as well as the cross-cutting theme projects and the Knowledge, Exchange and Communication Network have all enabled a wide range of domain experts, modelling, data, computing and programming specialists not only to work together on specific projects but also better understand each other's capabilities and establish longer-term collaborations. One in three partnerships established during the course of the programme have led to new collaborative projects/proposals.

Source: Warwick Economics & Development, ExCALIBUR Final Evaluation Report, March 2025.



Living with Machines (LwM) | Wave 1 | Lead: AHRC

LwM projects involve collaborations between historians, data scientists, digital humanists, computational linguists, curators, and literary historians. The integration of Research Software Engineers into the project to bring new research ideas from a different perspective is also not common in other research projects.

One reason for the project's positive research culture and successful fostering of an interdisciplinary collaboration environment is its non-hierarchical structure. The Principal Investigator explained that LwM quickly moved away from the planned traditional research model of a Principal Investigator/Co-Investigator leading a lab. Instead, they realised the project could have a better vision if post-docs were given the opportunity to lead sub-projects rather than focusing on the day-to-day delivery.

As a result of adopting a non-hierarchical structure, the programme was described by participants as 'highly collaborative' and 'incredibly open and collegial'. One participant mentioned that 'the opportunity to work with historians, demographers, linguists, librarians and other data scientists and engineers has been truly unique and much attention has been given to fostering a research culture in which everyone can contribute meaningfully. In particular, the efforts to avoid research being conducted in silos have been important and successful'.

As part of the programme evaluation, a survey was conducted with project researchers, advisory board members, and partner stakeholders, indicating that establishing an interdisciplinary collaborative model is producing early positive dividends. For instance, 80% of respondents indicated that the collaborative model has been very effective at creating a positive and fertile environment for researchers from different disciplines, institutional settings, and career stages to work together.

Source: AHRC, Living with Machines: Evaluation Mid-term Report, November 2021.

2.3.5 SPF programmes have also put in place mechanisms to bring together knowledge and insights from across their projects and activities

Above, we have considered the extent to which SPF applications and projects involve multidisciplinary and intersectoral teams. In this section we consider the extent to which MIDRI is also enabled via cross-project (programme-level) activities.

Our consultation with SPF leads suggests that most programmes have undertaken/are undertaking such activities that bring together knowledge and insights from across different projects, work packages or research activities. This includes:

- **Internal coordination workshops** – to raise awareness and understanding across the programme (83% of programmes had undertaken such activities by 2025). This includes regular meetings between PIs (all PIs, or sub-sets in the form of 'special interest groups' or 'communities of practice'), mid-programme workshops, annual cross-programme symposia and showcase events to share results of projects.
- **Synthesis workshops, seminars or other activities** – to combine insights or knowledge from the programme for external audiences (70% of programmes had undertaken such activities by 2025). This includes calls for specific projects to deliver synthesis activities, as well as centralised activities to combine learning across projects (see examples below).

Programme activities to synthesise R&I outputs – examples

Adolescence, Mental Health and the Developing Mind | Wave 2 | Lead: MRC

The AMHDM programme held a series of events, workshops and conferences in order to synthesise emerging R&I outputs.

A one-day policy conference was held in May 2024 to highlight the work of the multidisciplinary project teams to policymakers and practitioners. Presentations were given by representatives from the Departments for Education, Health and Social Care, and Culture, Media and Sports, plus the social care sector and Ministry of Justice to highlight areas of importance where research could be useful. A Data Workshop for the PIs was also run in June 2024, in collaboration with DATAMIND, to discuss issues around how to share mental health data across different organisations.

A further one-day Knowledge Sharing and Networking conference was held in November 2024 to showcase the work of the methodology projects to the multidisciplinary project teams and others. Principal Investigators from the methodology programmes gave presentations and Early Career Researchers (ECRs) presented posters. There were also sessions to discuss different areas of importance to the adolescent mental health community.

Programme leads provided further opportunities and encouragement for events to be organised. Four awards of £20k each were provided to early career researchers



to put on events for other ECRs over the course of 2024/2025. As a result, ECRs successfully organised conferences, workshops, communications, and training and have brought together ECRs from across all of the different projects.

Source: Technopolis (2025). Programme lead template response



Ensuring the security of digital technologies at the periphery | Wave 1 | Lead: EPSRC

Latter stages of the programme focused on synthesising research outputs, ensuring that all projects created societal impact, gathered evidence of impact realised, and carried out outreach and engagement activities. To support this, four synthesis fellows collated evidence of outputs and outcomes for publication. They worked across projects to identify common learning and what could be fed into government or industry. They also organised an online database of all research outputs and set up a number of knowledge exchange events.

Source: Technopolis (2025). Case studies



Modern slavery and human rights policy & evidence centre | Wave 2 | Lead: AHRC

The MSPEC policy impact team developed Policy Briefs. These are tailored for policy audiences and synthesise research and evidence on a particular topic, drawing on research funded by the MSPEC, and evidence reviews produced through the MSPEC consortium. The Policy Briefs rate the quality of the evidence, and where relevant, make specific recommendations for policymakers. Where relevant, workshops of funded project teams are convened to support the development of the Policy Briefs.

Source: Technopolis (2025). Case studies



UK Climate Resilience (UKCR) | Wave 1 | Lead: Met Office and NERC

A UKCR Webinar Series was established early in the programme, primarily in response to the COVID-19 lockdown as a way to continue engagement and sharing of research findings across the programme. These webinars were held fortnightly and available for wider community and stakeholders and provided a platform for academic research teams to share initial findings. The format of the webinars then allowed for a response from a non-academic partner or beneficiary which could give their perspective on the usefulness and relevance of the research, followed by a Q&A session. Each webinar was recorded and available to view via the website. The UKCR Programme Champions played a key role in the synthesis activity and tailoring of key messages for specific audiences. This helped to maximise the impact of the programme for ongoing policy and practice.

Three conferences also took place to synthesise and disseminate R&I outputs throughout the course of the programme:

- a mid-term, two-day online conference was organised with the Climate Change Committee and National Centre for Atmospheric Science in 2020 to examine if the UK is on track to adapt to climate change. Over 300 invited participants, including climate scientists, academics and government representatives,

debated the climate science and possible impacts, how far current and planned adaptation efforts go to manage risks, and what more needed to be done

- a Programme Showcase was held in Hull in October 2022. This in-person event celebrated the work of the programme through performances, tool demonstrations and opportunities to discuss the enhanced application of programme outputs, stimulating discussion on climate risks and management
- an end-of-programme conference was held in London in March 2023, where the programme research advancements were presented and its implications for policy and practice were discussed

Source: Technopolis (2025). Programme lead template response

2.3.6 These efforts seem to translate into a high degree of multidisciplinary and intersectoral collaboration in SPF publications

We also looked at the degree of MIDRI and intersectoral collaboration in publications emerging from SPF programmes and projects. From a ToC perspective, the premise is that greater interactions between actors representing different communities will increase the odds of research results being of more immediate relevance to communities outside academic circles. In fact, multidisciplinary research and public-private co-publications were previously found (more generally, beyond SPF) to be positively linked with the uptake of research findings in innovation (through the citation of publications in patents).^{25,26} More recently, Science-Metrix has also shown a similar link between multidisciplinary research and uptake of research findings in the policy-relevant literature²⁷ (discussed in Section 2.4.6).

Four indicators were used to assess disciplinary diversity of SPF papers (see below).

²⁵ Campbell, D., Struck, B., Tippett, C., & Roberge, G. (2017). Impact of multidisciplinary research on innovation. *16th International Conference of ISSI*, Retrieved from http://www.science-metrix.com/sites/default/files/science-metrix/publications/issi2017_paper_153_d_campbell_impact_multidisciplinary.pdf. Accessed 26 October 2020.

²⁶ Campbell, D., Tippett, C., Struck, D. B., Lefebvre, C., Côté, G., & Archambault, É. (2017). *Data mining on key innovation policy issues for the private sector: Application report*. Prepared by Science-Metrix for the EC.

²⁷ Vignola-Gagné, É., Pinheiro, H., & Campbell, D. (Submitted). A large-scale validation of the relationship between cross-disciplinarity and policy-relevant uptake of research using the novel Overton altmetrics database.

Indicators used to assess the disciplinary diversity of SPF papers

Two indicators are based on the diversity of co-authors' disciplinary background. These aim to capture the collaborative aspect in cross-disciplinary research (described in Section 2.3.4) and are a proxy for multidisciplinary. They are:

- the Multidisciplinary Index (MI) (as described in Section 2.3.4) is used to measure the diversity of the co-participants' disciplinary background, which aims to capture the collaborative aspect in cross-disciplinary research. Specifically, it captures the average multidisciplinary of publications linked to a given group.
- the index of Highly Multidisciplinary Publications (HMP10%), which captures the share of papers in that group that falls among the 10% most multidisciplinary papers in the same subfield, document type and year in the world (as a ratio of the expected share at world level which is 10%)²⁸

The other two indicators are based on the diversity of disciplines within the citations included in those papers (i.e. the reference list of papers). These aim to capture the knowledge integration dimension in cross-disciplinary research (measuring the extent to which authors mobilised knowledge produced in other disciplines to inform their research) and are a proxy for interdisciplinarity. This includes the Interdisciplinarity Index (II) and the index of Highly Interdisciplinary Publications (HIP10%). The difference between these is equivalent to between the MI and HMP10% above.

All the indicators are also normalised by subfield, year, and document type, using the world level as a reference (i.e. the whole of Scopus provides the value of 1).

We analyse this data for five groups:

- SPF papers (those identified as being SPF papers within GtR and Scopus)
- prior publications from SPF researchers (published prior to the first year of any SPF projects in which the researcher has participated). This group includes papers published between 2006 and 2024, although this varies by researcher²⁹
- parallel publications from SPF researchers (papers authored by SPF researchers after their first year in any SPF project, but not identified as an SPF paper). These are presumed to be publications associated with concurrent projects by SPF-funded researchers. They include papers published between 2018 and 2024.
- UKRI papers (all UK publications with funding from a UKRI council, identified in GtR and Scopus acknowledgements)
- UK papers (all publications with at least one UK-based author)

The baseline figures for SPF awardees are provided by the prior and parallel papers, while UKRI and UK figures provide a benchmark for comparison.

²⁸ Single-authored papers are not considered in these indicators; by definition, they are monodisciplinary since they do not integrate the expertise of different authors.

²⁹ The reference year for classifying publications for SPF researchers as 'prior' is not the starting year of the Fund, but the first year of each researcher in an SPF grant.

In this section, using the approach above, we focus on the multidisciplinary nature of papers (intersectoral collaboration at paper level is presented in Section 2.4.3).

We found that papers from SPF (SPF Papers in Table 5, Panel A) have a degree of multidisciplinary, 'MI' (diversity of authors' disciplinary background) that is above the world average (1.35 vs 1), and above rates for UKRI and UK papers (1.10 and 1.09). These differences are statistically significant.³⁰ SPF papers also have similar (slightly higher) MI scores compared to the two groups of SPF researchers' other publications (prior and parallel to SPF). This may reflect a higher inclination of multidisciplinary researchers to apply for SPF grants and/or the success of SPF's review process in selecting researchers with prior cross-disciplinary achievements, and SPF may have helped sustain their multidisciplinary activity.

Further analysis in the interim evaluation showed that SPF has attracted researchers with varying degrees of experience of producing multidisciplinary papers, with 33% of them having produced one paper or more with a low degree of multidisciplinary in the 5 years prior to SPF involvement, 24% with a medium degree of multidisciplinary and 44% with a high degree of multidisciplinary³¹ This further confirms that SPF has attracted researchers that are active (to varying degrees) in multidisciplinary work.

In contrast, Interdisciplinarity, 'II' (diversity of knowledge integration) is similar for SPF papers in comparison with the baselines (SPF prior papers and parallel papers) and only slightly higher than benchmarks (UK and UKRI) (Table 5, Panel B) (with these small differences being statistically significant). Note however that more time may be required between the beginning of a multidisciplinary project and the publication of its most interdisciplinary outputs. It is possible that the interdisciplinarity of SPF future publications increases as partnerships have more time to effectively work together and publish with higher interdisciplinary content.

As above, further analysis at the interim stage showed that SPF has attracted researchers with varying degrees of experience of producing interdisciplinary papers, with 23% of them having produced one paper or more with a low degree of

³⁰ 95% stability intervals (analogous to 95% confidence intervals) are shown in the table. Where they overlap there is no statistically significant difference.

³¹ Low multidisciplinary corresponds to researchers that have any paper scoring 2.5% or less than the top 10% most multidisciplinary at the world level, Medium multidisciplinary to those that have papers scoring 13% or less than the top 10%, and High multidisciplinary to those that have any paper scoring more than 13% than the top 10% most interdisciplinary. A similar distribution of researchers in each category (low, medium and high multidisciplinary) is observed for 11 or more papers (i.e. percentage of researchers with 11 or more papers that have low multidisciplinary scores in comparison with the world average).

interdisciplinarity in the 5 years prior to SPF involvement, 20% with a medium degree of interdisciplinarity and 57% with a high degree of interdisciplinarity.³²

The results above need to be taken with a little caution as they are based on just the 56% of SPF projects that have so far produced publications. However, they are consistent with results from the early findings (baseline) and Interim evaluation stages.

Table 5 Multi and interdisciplinary research indicators of SPF papers and comparators

Panel A	Publications 2006–17	Publications 2018–24	MI 2006–17	MI 2018–24	HMP 10% 2006–17	HMP 10% 2018–24
UK papers	1,805,823	1,403,415	1.09	1.09	1.18	1.23
UKRI papers	242,636	267,703	1.11	1.10	1.28	1.31
95% stability interval			1.10 - 1.11	1.10 - 1.11	1.27 - 1.30	1.29 - 1.32
SPF prior papers	84,314	24,547	1.33	1.32	1.76	1.83
95% stability interval			1.33 - 1.34	1.31 - 1.33	1.73 - 1.78	1.77 - 1.88
SPF parallel	0	45,521	n/c	1.32	n/c	1.82
95% stability interval				1.31 - 1.33		1.79 - 1.86
SPF papers	0	4,277	n/c	1.35	n/c	2.01
95% stability interval				1.32 - 1.38		1.88 - 2.12
Panel B	Publications 2006–17	Publications 2018–24	II 2006–17	II 2018–24	HIP 10% 2006–17	HIP 10% 2018–24
UK papers	1,805,823	1,403,415	1.01	0.99	1.09	1.04
UKRI papers	242,636	267,703	1.00	0.98	1.11	1.00
95% stability interval			1.00 - 1.01	0.98 - 0.99	1.10 - 1.12	0.99 - 1.02
SPF prior papers	84,314	24,547	1.09	1.08	1.28	1.27
95% stability interval			1.08 - 1.09	1.07 - 1.08	1.26 - 1.31	1.24 - 1.32
SPF parallel	0	45,521	n/c	1.05	n/c	1.17
95% stability interval				1.05 - 1.05		1.15 - 1.20
SPF papers	0	4,277	n/c	1.10	n/c	1.43
95% stability interval				1.09 - 1.12		1.34 - 1.55

Source: Computed by Science-Metrix using Scopus and GtR data (2025). Shows number of publications, multidisciplinary index (MI), highly multidisciplinary publications 10% (HMP10%), interdisciplinary index (II), highly interdisciplinary publications 10% (HIP10%). Shading (white to green) is a visual aid for lowest to highest results. Grey cells indicate data does not exist.

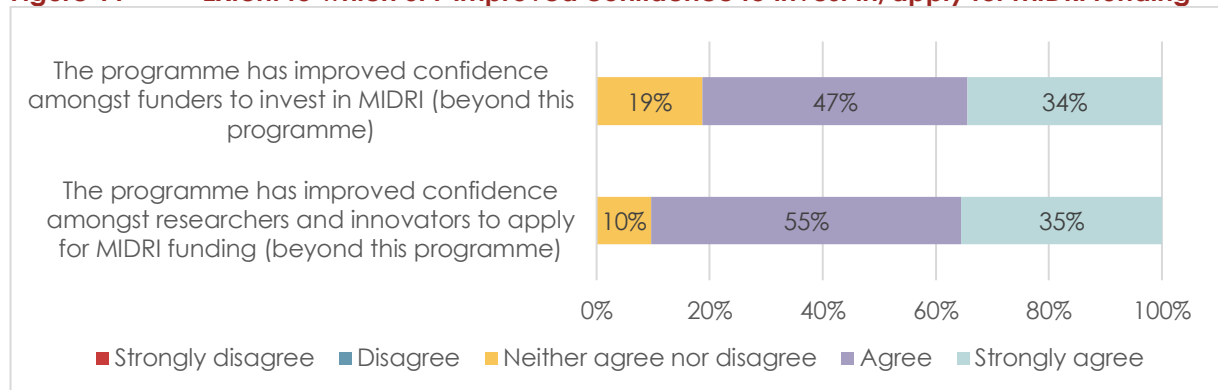
³² Classification has followed the same logic as the one described above for multidisciplinary.

Similar to results in earlier phases of the evaluation, the degree of multidisciplinary of SPF projects is (in many cases) higher than multidisciplinary at paper level, which is an interesting but not surprising result. Not every participant in a project team (and, by extension, their disciplines) will appear on every output by the project team. For instance, the individual members of a MIDRI project might start publishing individual, yet complementary, papers before integrating their respective streams of work in the project's MIDRI papers (published closer to the end, or even after a project). Under such a scenario, one would expect early-stage SPF papers to score lower than the corresponding SPF projects. This also highlights the importance of looking at multidisciplinary not only from the perspectives of the outputs (papers) but also from the perspective of the composition of the research teams.

2.3.7 There are early indications that SPF's MIDRI focus could have longer term (ecosystem) effects, reinforcing a wider momentum, an expected impact of SPF

For the final evaluation, we asked programme leads to consider the long-term impact of the MIDRI focus of SPF on how different groups perceived MIDRI funding. The great majority of leads (81%) agreed that the experience had improved confidence among funders to invest in MIDRI beyond this specific programme (i.e. outside of SPF), while an even greater proportion (90%) agreed it had improved confidence amongst researchers and innovators to apply for MIDRI funding in future.

Figure 11 Extent to which SPF improved confidence to invest in/apply for MIDRI funding



Source: Technopolis (2025). Responses from 31 SPF programme leads (excludes don't knows)

They went on to explain that SPF has helped increase attention and interest in MIDRI, reinforcing a wider momentum seen before and alongside SPF activities. For instance, one lead noted that 'having multiple concurrent MIDRI SPF programmes has helped funders and researchers understand UKRI's ambitions in this area'.

For most leads consulted, it was too difficult, or too early, to discern practical examples of this SPF influence on wider ecosystem activities. However, a small number (see quotes below) were able to point to specific examples of approaches to other programmes/calls that had been influenced by SPF (MIDRI) learning, or to early plans for further programmes with a MIDRI focus (encouraged by SPF).

‘We are using findings from our programme evaluation to inform our support for MIDRI in future funding calls. The programme has also been crucial in showing the benefits of MIDRI between the arts and humanities and data science to internal stakeholders.’ (Living with Machines programme lead)

‘Knowledge Exchange Coordinators were set up for each of the SPF-funded projects in order to drive knowledge exchange activities. The inclusion of such roles now forms part of our planning and thinking for future programmes.’ (ExCALIBUR programme lead)

‘Other interdisciplinary programmes being developed or delivered elsewhere in my team have benefited from some of the thinking and insights from SPF programmes, for example in considering the evaluation approaches that help to assess MIDRI.’ (Greenhouse Gas Removal Demonstrators lead)

The individual programme evaluation reports that are now starting to emerge also contain evidence of early-stage sustained effects of MIDRI collaborations within SPF.

In general they find that MIDRI activities within SPF, combined with a positive co-working environment created by funders, have allowed participants to better understand the capabilities of partners, to engage in future bid work together and to keep in touch post-project to exchange ideas. Multiple reports also mentioned that the positive rhetoric surrounding SPF has been important in highlighting the value of interdisciplinary research for producing good quality R&I outputs.

The wider ecosystem effects reported include enhanced professional networks of key experts specialising in the programme-specific topic areas, community hubs and regional champions that have continued their work beyond the programme, and spin out activities that have emerged post programme completion. Other positive examples highlighted in the programme evaluations are showcased below.

Examples of MIDRI-related ecosystem effects on the R&I community

Where projects were collaborative, 69% of scientists report a better understanding of partner capabilities, and 46% say they are more likely to collaborate on other projects as a result. Post-completion, 67% of Technical Leads also reported that they are still in contact with the companies they worked with and 31% have collaborated with them on other grant funded projects. (Analysis for Innovators programme)





A third (33%) of participants have noticed a change in the value that interdisciplinary work holds within their research community and saw LwM as being influential to this. Over half (53%) also have a spin-out project planned or in progress with project team members from another field. LwM has demonstrated the worth of investing in large-scale projects, incorporating a humanities focus in a way that was not the case before. 60% of respondents said they were likely to propose future projects using a collaborative model inspired by LwM. (Living with Machines programme)



The Circular Economy (CE)-Hub has had a substantial impact on fostering collaboration and network-building across sectors. 67% of industry respondents reported expanded networks, leading to partnerships and shared CE strategies.

Source: Technopolis (2025). *Meta analysis of individual programme level reports.*

The overall contribution of SPF to UKRI MIDRI activity is likely to be small, however, due to the relatively small scale of SPF and the breadth of other MIDRI-related efforts already underway across the Councils. This means, in practice, that even if various examples are found across programmes, the likelihood of SPF (alone) driving an ecosystem change is also relatively small. As such, evidence on the influence of SPF on confidence to invest in and apply for MIDRI funding (a sub-objective of SPF) is positive, but limited. The contribution of SPF would be better understood in the context of the various efforts that UKRI has in place to support MIDRI.

2.3.8 The experience in SPF and evidence collected in this evaluation provides some useful reflections and lessons learnt with regards to supporting and enabling MIDRI

Evidence from SPF provides potential lessons that future interventions aiming to support high-quality MIDRI might consider.

Programme leads highlighted the importance of multiple Councils working together closely from the start to ensure scoping is done with different perspectives in mind and that communication and promotion of opportunities is appropriately wide (and widely applicable). Even minor biases in implementation (e.g. using a lead Council's formatting, questions or procedures within calls), can act as a barrier or disincentive – dissuading other communities from applying or making this more difficult.

Programme leads have emphasised that it is beneficial to allow sufficient time for 'MIDRI partnerships' to form and respond to calls, in particular if the desire is to bring in communities that do not usually collaborate. In some cases, it has been possible to integrate this learning within the SPF programme itself. For example, based on feedback from the first wave of Clean Air funding, the programme provided more time and opportunities for MIDRI partnerships to form during the second wave (including via scoping workshops, webinars and networks).

Programme leads have also suggested that funding for networks/seed funding could be beneficial to bring together different communities and explore new ideas.

The grants themselves may also need to be several months longer (depending on their overall scale) to account for the greater challenges faced in working across disciplines. For example, the Living with Machines programme lead noted the learning during the programme that methodological approaches needed to be developed iteratively within projects because of the challenge in bringing people from very different cultural backgrounds with different working practices together.

Programme leads also mentioned that cross-communication activities should be planned and maintained throughout programmes. For instance, both internal and external partners were involved in the scoping out of the Clean Air programme. This multifaceted approach achieved a better working environment and was maintained throughout delivery. The programme team also worked closely with UKRI to align processes for delivery and reporting, and established good working relationships with external PIs, resulting in good communication of emerging findings, which were further promoted by the programme Champions. Another example is provided by the UK Climate Resilience programme (see below), which made use of Champions to connect and convene different projects and synthesise outputs.

The importance of planning cross-communication activities – example

UK Climate Resilience (UKCR) | Wave 1 | Lead: Met Office and NERC

The UKCR programme delivered a diverse portfolio of over 50 projects spanning climate risk, adaptation and climate services. A key element of the programme's success was the inclusion of a 'Champions' team to act as thought leaders, flag bearers and strategy owners. This investment in 'gluing' roles should not be underestimated, proving essential for building the community and ensuring that a programme of events was convened, individual projects were connected, and outputs synthesised to ensure the programme was more than the sum of its parts. This helped build trusting relationships at every level. The Champion team managed a small, flexible fund for synthesis and engagement activities that could be drawn on to enhance the accessibility of findings or to synthesise findings of different projects.

Source: Technopolis (2025). Programme lead template response.

It is also important not to lose momentum. There are new communities of practice created, but it is unclear if they will identify appropriate mechanisms to fund activities in the future. This may contradict the view (and evidence) that Councils support MIDRI regularly, but could highlight the importance of mechanisms such as SPF (operating at scale, cross-council), as well as clear statements of long-term ambition.

Some councils have, for instance, found it challenging to set up appropriate peer review processes, but lessons have been learnt that can be taken forward in future if MIDRI continues to be a central ambition. There is also the opportunity to learn from Councils that have more experience supporting MIDRI (e.g. BBSRC, MRC).

Other councils, highlighted that more efforts can be dedicated to scoping out continuation plans at programme onset, including in the original proposal. This could

help ensure programme continuation post completion, and further help inform thinking around what future funding to apply for (see Clean Air example below).



The importance of planning programme legacy – example

Clean Air | Wave 1&2 | Lead: NERC and Met Office

Leads felt that legacy plans for programme continuation were not sufficiently considered in programme scoping, and that this could be incorporated in the bid process and assessment criteria.

As the Clean Air Programme reaches its conclusion, attention has shifted toward embedding its legacy, and leveraging its successes to support long-term impact. A steering board is developing a white paper aimed at securing future investment from UKRI and advocating for continued research into the health impacts of air pollution. The final Clean Air conference and an upcoming impact report are also seen as critical moments for consolidating the programme's achievements, strengthening stakeholder relationships, and articulating a case for future funding.

The programme achieved significant shifts in norms, behaviours, and structures that suggest an emergent, though still fragile, ecosystem-level transformation. Sustaining the networks, behavioural shifts, and research-policy linkages created by Clean Air requires ongoing investment and ownership of shared infrastructure and mechanisms for continuity of tools, data, and relationships. Without a clear successor programme or funding stream, there is a risk that the progress made, particularly around intersectoral integration and research-policy alignment, could fragment over time.

Source: Technopolis (2025). Programme lead template response.

It is also important to note that there are wider framework conditions that may create barriers to multidisciplinary research, some of which may fall outside of what an individual Fund may deliver and may require a system level change. This includes:

- a lack of wider funding, incentives and training/mentoring for MIDRI
- challenges in setting up copyright and Intellectual Property agreements when many different stakeholders are involved, limiting MIDRI collaborations and leading to project delays
- a (perceived) difficulty in publishing (i.e. identifying the right journals) and getting sufficient academic/career recognition for MIDRI work (see example below)



The importance of wider framework conditions – LwM mid-term evaluation

Living with Machines (LwM) | Wave 1 | Lead: AHRC

Nearly all respondents [to the evaluation] referred to the difficulty that academics, especially early career, experience when applying for jobs if their CV consists of mainly interdisciplinary outputs. This is because the job market is structured around more 'traditional' academic single disciplines and not interdisciplinary research. This

point aligns with the evaluation baseline, which identified changes to the Research Excellence Framework (REF) as a key mechanism for de-risking MIDRI.

The LwM team have made a conscious decision to address this problem head-on by publishing work in 'traditional' single-discipline publications because there are not many interdisciplinary or multidisciplinary jobs; after the conclusion of the project, people will probably be returning to departments with traditional structures. One interviewee noted that the evolution of UKRI over the last ten years towards supporting and encouraging interdisciplinary work has not followed through into the culture of research groups in most universities.

Source: *Living with Machines programme mid-term evaluation (2022)*

2.4 SPF has helped to address government R&I priorities, via additional expenditure, and through government department involvement in and use of research developed under the Fund

2.4.1 SPF has increased UKRI spend in government R&I priority areas, an expected outcome of SPF

We have conducted an analysis of UKRI spend in some of the key areas identified and funded by SPF, to draw comparisons with a baseline (2008–2018) and a benchmark (UKRI). The approach taken is summarised below.

Approach to analysing UKRI spend in priority areas

Analysing UKRI spend in priority areas required mining the entire GtR database to compare investments made historically in the areas of interest (using a classification algorithm applied to grant abstracts). Given the scope of the exercise (and diversity of areas covered by SPF), we focused on seven areas that correspond to our longitudinal case studies, which provide a good spread in terms of themes covered, partners involved and Waves (See Appendix B, for more information on case studied programmes). The research covered by the National Timing Centre has not been included, since NPL is the national agency responsible for advancing knowledge on this area, and consequently UKRI does not tend to support grants here.

We also relied on an automated approach using an algorithm that applies Natural Language Processing to classify text (from grants) into our selected research areas.³³ This approach was needed to be able to systematically classify 5,000+ grants from the UKRI portfolio for the period of analysis. As such, this analysis should be taken as an ‘approximation’ to UKRI’s spend in those research areas.

In order to draw comparisons with a benchmark (UKRI), the analysis focuses on the value of grants in competitive calls up to and including 2022 (93% of SPF grants started between 2019 and 2022).

Further details on the methodology are provided in the Appendix A.

The analysis (see Table 6) shows that UKRI investments in all of the selected priority areas have been increasing over time (based on the average yearly value of grants) as a proportion of UKRI investments overall, suggesting an increasing importance and focus in these areas among UK funders and the R&I community. Most notably,

³³ <https://www.textrazor.com/technology>. TextRazor has been used in academic papers to arrive to classifications of text, including for instance, Bicchielli, Chiara & Biancone, Noemi & Ferri, Fernando & Grifoni, Patrizia. (2021). BiOnto: An Ontology for Sustainable Bioeconomy and Bioproducts. Sustainability. 13. 4265. 10.3390/su13084265.

the proportion of UKRI's investment in the areas of (research on) Mental Health and Adolescence, on Productivity, and on Modern Slavery have all more than trebled.

Table 6 (Average) yearly total value of grants (in £m, nominal figures)

Programme	Area	UKRI (prior to SPF) 2008–18	% of total UKRI	UKRI (incl. SPF) 2019–22	% of total UKRI
Ensuring the Security of Digital Technologies at the Periphery	Cybersecurity	28.1	0.94%	42.66	1.01%
Space Weather Innovation, Measurement, Modelling and Risk	Space Weather	5.59	0.19%	9.66	0.23%
UK Animal and Plant Health	Bacterial Plant Diseases	2.4	0.08%	4.61	0.11%
Adolescence, Mental Health and the Developing Mind	Mental Health & Adolescence	3.2	0.11%	13.96	0.33%
Productivity Institute	(Research on) Productivity	6.69	0.22%	28.35	0.67%
Policy and Evidence Centre for Modern Slavery and Human Rights	Modern Slavery	0.14	<0.01%	4.95	0.12%
Clean Air: Analysis and Solutions	Air quality	16.7	0.56%	40.37	0.95%
	Any Area	2,992.8		4,238.7	

Source: Technopolis (2022) based on GtR data *To minimise false positives (Research on) Productivity only includes grants provided by ESRC. The Any Area total includes all grants (inside and outside of the seven areas listed) and is used as the denominator for calculating the percentage column (e.g. value of cybersecurity grants as a % of value of all grants).

Table 7 then shows the SPF funding contribution to this increase across all areas. There are 4 areas where SPF has made a substantial difference (in terms of average value of funding): Bacterial Plant Diseases, Space Weather and Research on Productivity, where SPF explains 56%–75% of the overall increase in the average annual value of grants between the two periods. Additionally, there is also a 23%–35% increase across all of the other four research priorities driven by SPF funding.

It is possible that some of this funding would have been available to these same areas in the absence of SPF, but we are unable to test the extent to which this would have been the case (the counterfactual scenario). Equally, SPF investments may have driven greater attention to these areas, enabling some of the non-SPF increases that are seen alongside the SPF grants.

Table 7 Increase in average yearly total value of grants accounted for by SPF

Programme	Area	Increase in average yearly total value of grants (£m), 2008–18 to 2019–22	% of increase accounted for by SPF
Ensuring the Security of Digital Technologies at the Periphery	Cybersecurity	+14.6	26%
Space Weather Innovation, Measurement, Modelling and Risk	Space Weather	+4.1	57%
UK Animal and Plant Health (renamed Bacterial Plant Diseases)	Bacterial Plant Diseases	+2.2	75%
Adolescence, Mental Health and the Developing Mind	Mental Health and Adolescence	+10.8	35%
Productivity Institute	(Research on) Productivity	+21.7	56%
Policy and Evidence Centre for Modern Slavery and Human Rights	Modern Slavery	+4.8	23%
Clean Air: Analysis and Solutions	Air quality	+23.7	26%

Source: Technopolis (2022) based on GtR data *To minimise false positives (Research on) Productivity only includes grants provided by ESRC

2.4.2 There was ongoing involvement of government across SPF programmes

We consulted SPF programme leads about government involvement in programmes at three separate points in time – in 2021, in 2022 and in 2025. A summary of the responses is shown in Figure 12.

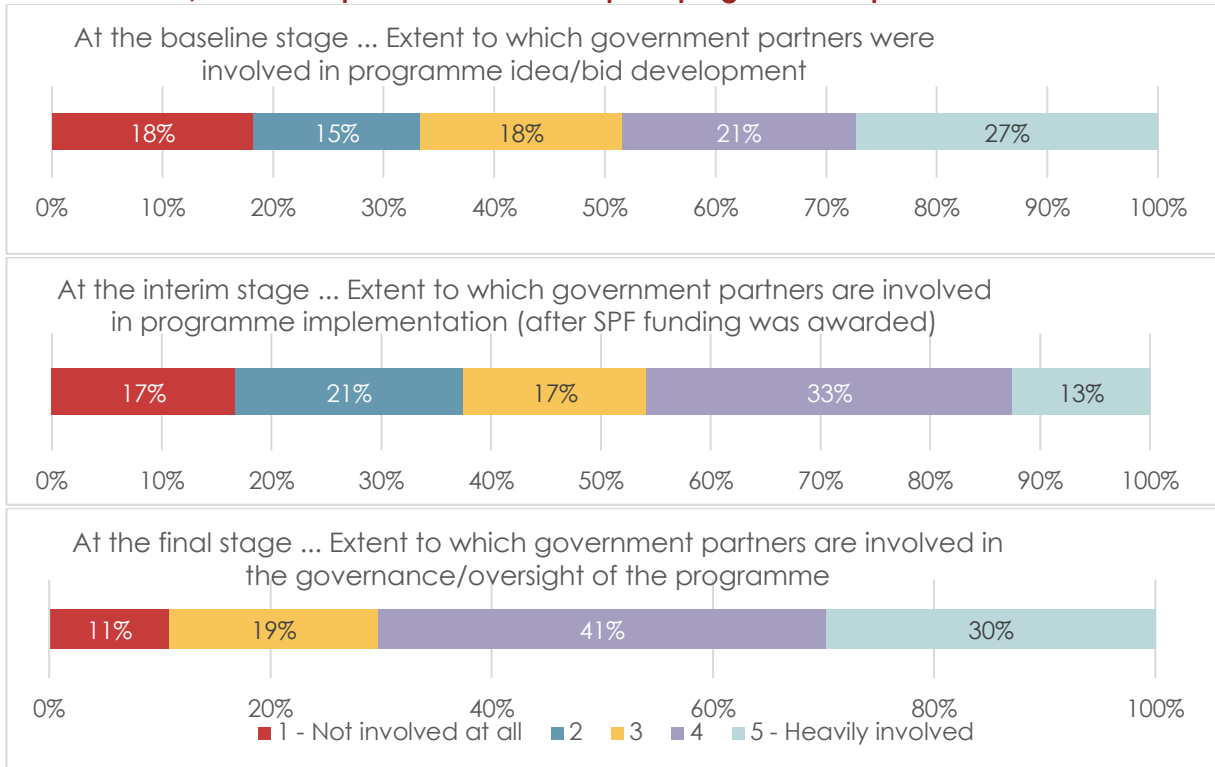
For the Baseline and Early findings report, we consulted leads (in 2021) on the involvement of government departments and agencies in the formation of programme ideas and the development of the SPF programme bids (see top graph in the figure below). This found that most programmes (27/33, 82%) had had some degree of government involvement in these preparatory stages, with nearly half (48%) reporting strong involvement (a score of 4 or 5 in the ratings shown below).

In consulting with leads a year later (2022) for the Interim evaluation we found this breadth and depth of government involvement maintained, with 83% reporting some involvement during programme implementation and 45% reporting strong involvement. This is despite challenges that were also noted by many of the leads relating to changes to personnel (in government departments and partner organisations) and the competing demands on the time of representatives (where programmes were often engaging at quite a senior level at the bid stage).

Finally, we consulted with leads in 2025 for the Final evaluation and found that government departments remained strongly involved throughout programme implementation, with 89% of leads still reporting some involvement of departments in governance/oversight. In fact, at this final stage, 70% reported heavy involvement.

This is in line with findings from the survey we conducted with SPF programme Advisory Board members in 2025. When asked to consider any gaps in the types of organisations in the Advisory Board, only 5% (or 2/42) of respondents indicated that more government representation would have been helpful.

Figure 12 Extent to which government partners were involved in SPF programme ideas/bid development and in subsequent programme implementation



Source: Technopolis, based on responses from 33 leads of SPF programmes (baseline evaluation, 2021), 24 leads of SPF programmes (interim evaluation, 2022) 27 leads of SPF programmes (final evaluation, 2025). Given the slightly different portfolio of programmes that have responded at these two points in time, one should not draw strong conclusions in comparing the specific proportions reporting each answer option at the two different stages

A selection of specific examples of government involvement in the implementation of SPF programmes is shown below.

Ongoing government involvement in programme implementation – examples

Bacterial Plant Diseases: The programme refined a strategy that had already been adopted elsewhere. It involved having the Department for Environment, Food and Rural Affairs (DEFRA) and the Scottish Government rating the applications separately from the peer reviewers according to their fit to government strategic priorities. The coordination team was positively surprised to see that the ones rated best for scientific excellence were also strategically relevant to the partners.

Clean Air: Representatives from government departments (DEFRA, the Department of Health and Social Care (DHSC), DfT) are members of the Programme Board and Steering Committee. The bid was developed in consultation with the CSAs from DEFRA, DHSC, and DfT. The involvement of these departments allowed them to monitor specific priorities and provide a steer if priorities changed.

Constructing a Digital Environment: For the demonstrator call, DEFRA produced a 'statement of digital need' document, highlighting priority areas to be addressed.

Productivity Institute: Government departments sit on the programme board and are well connected with the funded researchers. The Director and Deputy Director of the Programme for Innovation and Diffusion have been seconded into the Treasury as special advisors. One investment works with the Department for Work and Pensions (DWP) often through their insights into pension reform, The Productivity Institute works with the Department for Business and Trade (DBT) on insights into productivity more widely but also to support the development of the industrial strategy.

Transforming UK Food Systems: Government departments were asked to comment on the relevance of project proposals to key policy priority areas.

Source: Programme lead template responses and Case Studies

2.4.3 PSREs involvement in SPF projects is higher in comparison with other grants funded by UKRI, but the overall scale of activities is limited

SPF set out to achieve one of its overarching objectives (on linking up UKRI's investments with government priorities), in part, by allowing government departments' Public Sector Research Establishments (PSREs) to be eligible to bid for competitive funding, alongside universities, businesses, and research establishments.

In addition to DSIT PSRE involvement as programme partners (see Section 2.1.2), SPF also allowed a wider set of PSREs (supported by DSIT and other departments) to bid for competitive funding through individual programmes, alongside universities, businesses, and research establishments. This represented a widening of the standard eligibility criteria, following the precedent set by the Global Challenges Research Fund. In this way, SPF provided an opportunity to further test how the involvement of PSREs could work in practice. A similar opportunity to bid was used in 2020 for a COVID-19 call and the policy was then expanded to all UKRI grants from April 2021.

There is no agreed definition or definitive list of PSREs. However, in 2019, UKRI (with the support of the then BEIS and GO-Science) developed a preliminary (non-exhaustive) list of 26 that were potentially eligible to bid for Research Council grants under SPF. Those (on the list or not) wishing to apply for funding through an SPF programme had first to apply to UKRI for eligibility. There are now 31 organisations identified by UKRI as potentially eligible.³⁴ Some of these may have applied for eligibility because of the COVID-19 call or the subsequent expansion of the policy across UKRI, while others may have been driven by SPF opportunities.

³⁴ The UKRI website lists 19 PSREs that have been deemed eligible, plus a further 12 that are likely to meet the criteria to be eligible. See <https://www.ukri.org/publications/organisation-eligibility/research-organisations-eligible-for-ukri-funding/> Last updated 16th January 2025. Organisations from both lists have been identified within SPF grants, so all have been included within the analysis.

Analysis of GtR data shows that 22 of these PSREs have collaborated on SPF grants,³⁵ between them accounting for 103 of the 852 grants awarded (12%).³⁶ This includes 29 grants with 2 or more PSREs involved in the consortia (152 PSRE participations in total).

The top 5 PSREs (based on number of grants) are then shown in Table 8. These organisations account for 52% of the SPF grants with PSRE involvement.

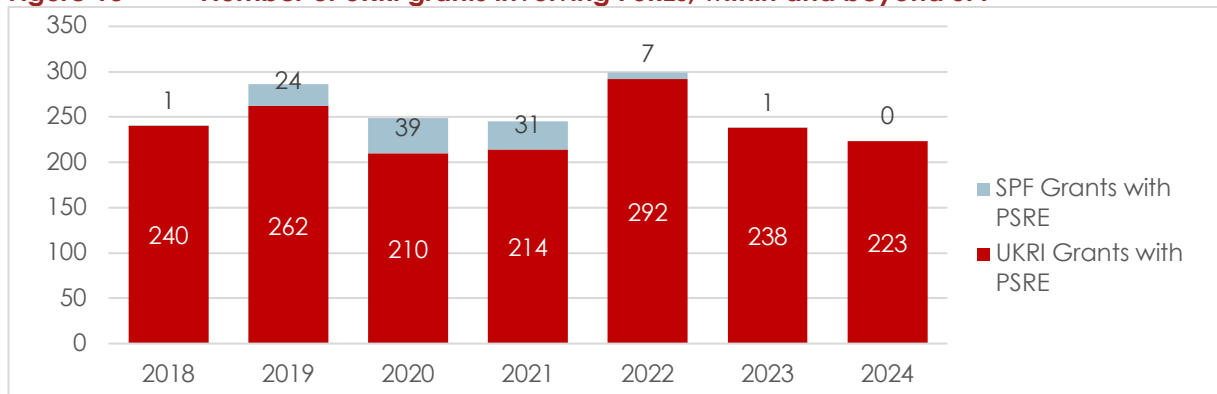
Table 8 Top 5 Public Sector Research Establishments involved in SPF grants

PSRE	SPF grants (2019-25)
Environment Agency	27
Natural England	20
Defence Science and Technology Laboratory	13
Met Office	10
Scottish Environment Protection Agency	9

Source: Technopolis (2025) based on GtR data

In relative terms, PSRE involvement in SPF grants is high compared with other UKRI grants awarded in the same period (start dates 2018 to 2024), where 2% of the 72,563 total involved a PSRE participant (compared to 12% for SPF). However, the volume of activity within SPF (103 grants with PSRE involvement) is still quite small in absolute terms, when compared to the 1,679 UKRI grants with PSRE involvement (Figure 13).

Figure 13 Number of UKRI grants involving PSREs, within and beyond SPF



Source: Technopolis (2025) based on GtR data

³⁵ Note that being listed within GtR as a collaborator on a grant does not necessarily mean that the organisation has received grant funding. Note also that grants to NPL management Ltd (a company) have been excluded, while grants to NPL (a PSRE) have been included. Similarly grants to LGC Ltd (a company) have been excluded, while grants to NML and the Office of the Government Chemist (PSREs that are part of LGC) are considered in scope.

³⁶ 852 research council and Innovate UK grants that could be identified within Gateway to Research (out of the 867 total). Also excludes 139 grants from the Met Office.

2.4.4 There is also evidence of increased collaboration (with government and PSREs) in SPF publications

There is evidence that signals that SPF publications include more intersectoral collaboration, in comparison with benchmarks.

We analysed data for five groups, with baseline figures for SPF awardees provided by the SPF prior and parallel papers, and with UKRI and UK figures providing a benchmark. The data has also been normalised to account for differences in research practices within each of these dimensions. The indicators are computed using the UK as reference.

As shown in Table 9, we found that:

- SPF projects, currently represented in 4,277 SPF papers, contain a much greater contribution from authors affiliated to UK government (3.20) than the UK (1.00, benchmark) and UKRI papers (1.09). This is also substantially higher in comparison with SPF prior and parallel papers (1.30 and 1.70 respectively). These differences are all statistically significant.³⁷ This suggests that some researchers involved in SPF tended to collaborate with government-affiliated authors before SPF (to a greater extent in comparison with UK and UKRI grants more generally). However, the degree of collaboration is considerably higher within SPF. This may mean that the Fund is both increasing the depth of engagement amongst those already collaborating with government, as well as increasing the pool of researchers that collaborate with government (Table 9).
- there is also higher contribution from authors affiliated to government, PSREs or Councils in SPF papers, in comparison with the baseline and benchmarks.
- contribution from authors affiliated to UK companies is lower for UKRI papers in comparison with the UK (0.91 vs 1) and similar for SPF papers in comparison with baseline and benchmarks.

³⁷ 95% stability intervals (analogous to 95% confidence intervals) are shown in the table. Where they overlap there is no statistically significant difference.

Table 9 Normalised share of intersectoral co-publications between academic sector and other sectors

Publications	UK Government 2006–17	UK Government 2018–24	UK PSRE 2006–17	UK PSRE 2018–24	UK RC 2006–17	UK RC 2018–24
UK papers	1.00	1.00	1.00	1.00	1.00	1.00
UKRI papers	0.87	1.09	1.13	1.22	1.97	2.27
95% stability interval	0.84 - 0.90	1.04 - 1.13	1.10 - 1.17	1.18 - 1.25	1.94 - 1.99	2.25 - 2.30
SPF prior papers	1.26	1.30	1.27	1.56	2.52	2.49
95% stability interval	1.19 - 1.32	1.19 - 1.42	1.22 - 1.33	1.45 - 1.69	2.48 - 2.56	2.41 - 2.57
SPF parallel papers	n/a	1.70	n/a	1.48	n/a	2.48
95% stability interval		1.55 - 1.87		1.34 - 1.62		2.37 - 2.58
SPF papers	n/a	3.20	n/a	1.51	n/a	3.32
95% stability interval		2.28 - 4.25		1.04 - 2.02		2.77 - 3.75

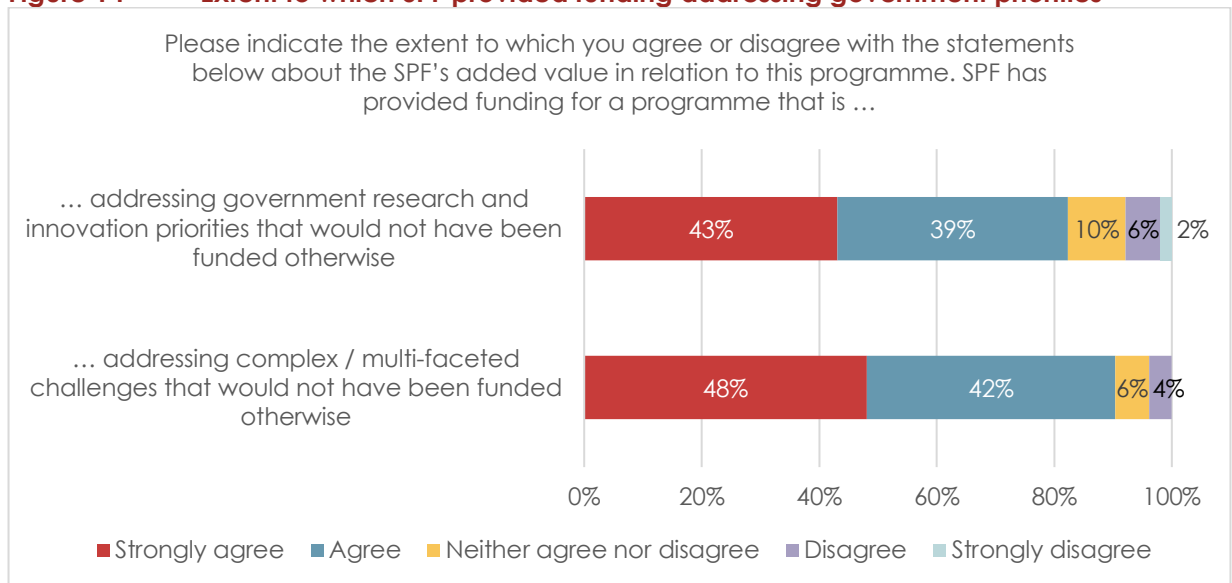
Publications	UK Gov PSRE RC 2006–17	UK Gov PSRE RC 2018–24	Private 2006–17	Private 2018–24	Other 2006–17	Other 2018–24
UK papers	1.00	1.00	1.00	1.00	1.00	1.00
UKRI papers	1.61	1.84	0.83	0.91	0.92	0.93
95% stability interval	1.59 - 1.63	1.83 - 1.86	0.81 - 0.84	0.89 - 0.92	0.92 - 0.93	0.92 - 0.93
SPF prior papers	2.08	2.11	1.00	1.04	1.08	1.06
95% stability interval	2.05 - 2.11	2.05 - 2.16	0.98 - 1.03	1.00 - 1.08	1.07 - 1.09	1.04 - 1.08
SPF parallel papers	n/a	2.10	n/a	1.07	n/a	1.10
95% stability interval		2.04 - 2.19		1.01 - 1.11		1.08 - 1.12
SPF papers	n/a	2.73	n/a	0.99	n/a	0.90
95% stability interval		2.38 - 3.02		0.80 - 1.15		0.82 - 0.98

Source: Computed by Science-Metrix using Scopus and GtR data (2025). Shading (pink to green) is just a visual aid to identify lowest to highest results. Grey cells have not been calculated as information does not exist. 95% stability intervals are analogous to 95% confidence intervals, and where they overlap there is no statistically significant difference.

2.4.5 SPF adds value in efforts to address government R&I priorities

In 2025 when most programmes were coming to an end or were completed, the vast majority (91%) of SPF programme leads surveyed agreed that their programme had been able to address more complex or multi-faceted challenges than would normally be the case. A similar proportion of programme Advisory Board members surveyed (90%) agreed with that statement. Most Advisory Board members surveyed (81%) also agreed that the programme addressed government R&I priorities that would not have been funded otherwise, with 42% stating that they strongly agree with this statement (see Figure 14 below).

Figure 14 Extent to which SPF provided funding addressing government priorities



Source: Technopolis (2025) based on responses from 51 SPF programme Advisory Board members (which excludes those who responded 'don't know')

Additional qualitative evidence collected via case study suggests that SPF has facilitated stronger collaboration with government departments across all 8 programmes examined, and that SPF additionality (i.e. the degree to which results would not have been achieved via other means) is high in almost all cases.

Table 10 Analysis of SPF additionality – case studies

Case study	Partners	SPF additionality
Adolescence, Mental Health and the Developing Mind (Wave 2)	MRC (lead), AHRC and ESRC DfE, DCMS and the Welsh government	Ability to fund more complex and multi-levelled research projects in this area, at a greater scale, and with more cross-Council working than usually possible through previous/existing mechanisms
Bacterial Plant Diseases (Wave1)	BBSRC (lead), NERC DEFRA and Scottish Government	Funding has allowed a coordination team – which in turn has enabled dissemination of outputs Funding has allowed different partners to come together and co-design priorities, balancing the time required to undertake robust research and the speed with which answers are needed
Clean Air (Wave 1&2)	NERC and Met Office (lead), EPSRC, ESRC, IUK, MRC, NPL Defra, DfT, DHSC, Scottish Government, Welsh government	Funding has allowed a wide set of stakeholders to be brought together and closer coordination than would have otherwise been possible
Ensuring the Security of Digital Technologies at the Periphery (Wave 1)	EPSRC (lead), AHRC, ESRC and IUK Department for Digital, Culture, Media and Sports (DCMS), Government Communications Headquarters (GCHQ)/ National Cyber Security Centre (NCSC) and the Home Office	Funding has allowed the continuation of Privacy, Ethics, Trust, Reliability, Acceptability and Security National Centre of Excellence for IoT Systems Cybersecurity.
Modern Slavery and Human Rights Policy and Evidence Centre (MSPEC) (Wave 2)	AHRC (lead), ESRC Home Office	Funding (scale) has allowed the setting up of a 'network of networks', with the MSPEC also mediating new partnerships (e.g. people with lived experience, businesses and the Home Office)
National Timing Centre (Wave 2)	NPL (lead), IUK MoD, DSIT and DfT	Partners were already well connected and collaborating before SPF, but the scale of SPF funding has allowed them to address this particular national need in a timelier and coordinated manner
Productivity Institute (Wave 2)	ESRC (lead), IUK Treasury, DSIT, DWP	Thanks to SPF funding, this is the first-time different needs and priorities from different stakeholders (academia, industry, government) and research outputs are brought together under one institution
Space Weather, Innovation, Measurement, Modelling and Risk programme (Wave 2)	Science and Technology Facilities Council (STFC, lead), NERC and Met Office DSIT, MoD and DfT	Funding has allowed close working with the Met Office – with academic work being adapted so it can be more easily implemented in Met Office's forecasting tools

Source: Technopolis. Case studies

2.4.6 Programmes put in place strong mechanisms to distribute findings relevant to government departments

SPF programmes have been active in ensuring that emerging findings are distributed to relevant government departments. Almost all (24/25 or 96%) of the programme leads surveyed in 2025 indicated that they held programme-level events or workshops to disseminate results. In addition, over two-thirds (76%) conducted presentations to selected committees/groups and a similar proportion (72%) put together reports setting out results, conclusions or recommendations for government.

Our meta-analysis of programme-level evaluations also revealed evidence of other channels for communicating emerging findings to government. These included targeted events and one-on-one meetings with representatives, sharing digital materials, and tailored research summaries. Some programmes also produced outputs serving a specific policy purpose, such as user databases or sector-specific reports. Some examples of dissemination techniques are summarised below.

Examples of policy dissemination mechanisms on a programme level



The AI for Science and Government (ASG) research community has been actively engaging in policy discussions through various routes. This includes the publication of three white papers, contributions to policy consultations and providing informal advice to policy makers. As of April 2023, ASG researchers reported 80 examples of contribution and impacts to policy and practice, including public engagement (37), influences on professional practice (31) and citations (12). (ASG programme)



Over 50 cases of policy influence were identified across the Clean Air programme. Interdisciplinary collaboration was implemented by bringing together and working with stakeholders from various sectors or policy communities, e.g. meetings with leaders of London local authorities, or meetings with the Environment Agency who are running an initiative about air quality inequality issues. (Clean Air programme)



Programme participants have been enabled to present at international conferences and engage in policy-influencing activities with international reach, thereby contributing to Greenhouse Gas Removal research practice and policy developments beyond the UK. (Greenhouse Gas Removal programme)



The MSPEC has built trusting and ongoing relationships with a wide number and variety of policymakers. Key attributes to the work were its accessibility and effectiveness in communicating key findings in a concise way. These include: seven policy briefs, which synthesise evidence on a topic, rate its quality and make recommendations for policymakers; and 22 research summaries, co-produced with funded research teams, summarising the project findings and tailored to specific audiences. (MSPEC programme)

Source: Technopolis (2025). Meta analysis of individual programme level evaluation reports.

All twenty-two of the government representatives interviewed for the study in 2025 mentioned that they had seen outputs emerge from SPF programmes. They agreed that programme leads were generally good at communicating findings, but many also sat on programme Advisory Boards or Steering Committees and received quarterly updates on emerging findings via this route also. Many had also participated in programme conferences, as well as other seminars, webinars, and workshops.

Most government representatives commented that the papers produced from SPF were of very high quality and covered the originally set research objectives. The feedback and guidance provided via a formal peer review process, as well as via the programme Steering Groups, was considered key for quality assurance, in addition to working with high profile research experts. Academic neutrality was also considered a strength, and policy representatives felt confident in citing papers internally. Some direct quotes from government representatives can be found below.

'I have been quite impressed with the level of detail and peer reviewed work that has been coming out already. The research I have seen, I think it is of very good quality so I would love to make sure that those academic papers are built upon in the future and further feed into our work, because there is some very interesting data there.' (Department for Energy Security and Net Zero (DESNZ) representative, Greenhouse Gas Removal programme)

'I think the quality has been high and they [the papers] have been on subject. The outputs are still coming out because even if the SPF programmes are coming to an end, it takes a while to finish getting the results out. So, I think there have been some good outputs from the programmes, but they have been mostly targeted at traditional academic routes.' (DEFRA representative, National Interdisciplinary Circular Economy Research)

Most of the government representatives interviewed felt that the outputs emerging from SPF programmes have been relevant to the policy work they are doing, and in many instances closely aligned with policy priorities highlighted in sector plans, government reviews and action frameworks. They also highlighted strong interest in the findings within departments and mentioned conducting regular internal catch-up meetings dedicated to tracking programme progress and emerging findings.

2.4.7 There is also positive evidence of uptake by government and of contributions to supporting government policy and practice, an expected outcome of SPF

This is evidenced via assessment by programme leads, citation impact analysis, interviews with government departments and concrete examples of uptake.

In 2025, when most SPF projects were at or close to completion, 59% (or 19/32) of programme leads stated that their programme had already achieved uptake, use and/or implementation of R&I results by government/policymakers.

Additionally, we analysed the degree of citation of publications emerging from SPF programmes (and projects) within policy-related literature (PRL) (see Table 11) and found a higher uptake of SPF publications in policy documents in comparison with the benchmarks (UK & UKRI) (1.71 vs 1.00 and 1.20 respectively). These differences are statistically significant.³⁸ Comparison with SPF researchers prior and parallel papers shows that they already had a good track record in being cited in PRL, but that their rates are even higher in relation to SPF grants.

Note that there is a lag in the citation of publications. In fact, only around 30% of citations are accrued in the 2 years following the publication of a paper.³⁹ As such, the analysis currently only extends to publications in 2022.

Table 11 Total number of publications and normalised share cited in PRL

Publications	Publications 2006–17	Publications 2018–24	Share of papers cited in PRL 2006–17	Share of papers cited in PRL 2018–24
UK papers	1,805,823	1,403,415	1.00	1.00
UKRI papers	242,636	267,703	1.14	1.20
95% stability interval			1.13 - 1.15	1.18 - 1.21
SPF prior papers	84,314	24,547	1.38	1.39
95% stability interval			1.37 - 1.39	1.36 - 1.42
SPF parallel papers	n/a	45,521	n/a	1.51
95% stability interval				1.47 - 1.54
SPF papers	n/a	4,277	n/a	1.71
95% stability interval				1.58 - 1.86

Source: Computed by Science-Matrix using Scopus, Overton and GtR data (2025). Note that results are normalised against the average of UK papers. Shading (white to green) is just a visual aid to identify lowest to highest results. Grey cells have not been calculated as information does not exist. 95% stability intervals are analogous to 95% confidence intervals, and where they overlap there is no statistically significant difference.

³⁸ 95% stability intervals (analogous to 95% confidence intervals) are shown in the table. Where they overlap there is no statistically significant difference.

³⁹ Based on internal analysis done by Science-Matrix.

Some government interviewees mentioned the role of programme outputs in drawing learning on emerging research topics within their respective department, but did not specifically incorporate them in policy documents. Others highlighted that the programme they were involved with was exploring an emerging policy topic and contributed to a culture shift and increased interest in a new subject area.

Some government representatives mentioned incorporating findings in policy action plans, or practical guideline documents. Examples of uptake are set out below.

Examples of contributions to government policy and practice



Nucleic Acid Therapy Accelerator programme: Programme findings and direct contributions were incorporated in the [England Rare Diseases Action Plan \(2025\)](#),⁴⁰ which sets out how the DHSC and delivery partners will implement the UK Rare Diseases Framework in England. One of the document's purposes is to inform delivery partners on any research that has been completed on rare diseases and raise awareness on emerging findings from regulation through to service delivery.



Transforming UK Food Systems for Healthy People and a Healthy Environment:

Principles and concepts of the programme were used to build the second part of the [National Food Strategy for England \(2025\)](#).⁴¹



Trustworthy Autonomous Systems (TAS): Information from the TAS Hub was used to inform the development of the [Transport AI Action Plan \(2025\)](#)⁴² which sets out the approach DfT is taking to working with AI. The document is aimed at encouraging the transport sector to engage with the department in adopting opportunities for AI to improve the effectiveness, efficiency and inclusion of transport delivery systems.



UK Climate Resilience:

[Informing the Climate Change Risk Assessments Evidence.](#) A CSA reported that the programme has helped to build the evidence for Climate Change Risk Assessments (CCRA), with several outputs already used to directly inform the CCRA Evidence Report. Seminars raising awareness of outputs and bringing together the research and end users have been well attended and improved understanding.



[City Packs:](#)⁴³ City packs produced by the programme have now become part of the local authority climate service. Packs were developed using UK Climate Projections data to provide high-level, non-technical local summaries of the future climate of UK

⁴⁰ <https://www.gov.uk/government/publications/england-rare-diseases-action-plan-2025>

⁴¹ <https://www.gov.uk/government/publications/a-uk-government-food-strategy-for-england/a-uk-government-food-strategy-for-england-considering-the-wider-uk-food-system>

⁴² <https://www.gov.uk/government/publications/transport-artificial-intelligence-action-plan>

⁴³ <https://www.metoffice.gov.uk/research/approach/collaboration/spf/ukcrp-outputs>

cities and regions. They used graphics and tables to communicate scientific research in an accessible way, providing robust climate information to help urban decision makers plan for the future, enabling cities to become more resilient.

Source: Technopolis (2025), Interviews with government representatives, plus interviews from previous phases of the evaluation.

Qualitative evidence collected via case studies also shows concrete examples of how research outputs and insights emerging from SPF programmes (and projects) are helping to inform policy decisions (see Table 12).

Table 12 Uptake of programme research outputs – case studies

Case study	Progress towards outcomes (uptake)
Bacterial Plant Diseases (Wave 1)	<ul style="list-style-type: none"> Preparedness for <i>Xylella fastidiosa</i> – protocol to address disease available in Local Authorities around the country, and better understanding of the disease
Clean Air (Wave 1 and 2)	<ul style="list-style-type: none"> Research directly informed updates to government air quality guidelines, focusing on reducing exposure among vulnerable populations. Local authorities used these outputs to support the introduction of low-emission zones and other targeted pollution control measures, addressing specific regional challenges
Ensuring the Security of Digital Technologies at the Periphery (Wave 1)	<ul style="list-style-type: none"> Policy recommendations related to cybersecurity and IoT – including, for instance, on the ethics of using IoT sensors in public places – adopted by DCMS and DfT in official position papers Supported the Information Commissioner's Office (ICO), contributing to the 2022 Tech Horizons Report
Modern Slavery and Human Rights Policy and Evidence Centre (Wave 2)	<ul style="list-style-type: none"> The Statutory Guidance for Modern Slavery Victim Identification and Support in England and Wales was updated to make legal aid entitlements clearer, in line with the recommendations made by a Modern Slavery PEC-funded research project on access to legal advice for survivors of modern slavery The Home Office started publishing the additional National Referral Mechanism (NRM) data in line with our policy briefing recommendations featured in the Centre's policy briefing on identification of potential victims, including data on the links between modern slavery, small boat Channel crossings and asylum Informing Parliamentary scrutiny, for example, the UK Joint Committee on Human Rights (JCHR) cited the Centre's evidence several times in its report on the modern slavery provisions of the Nationality and Borders Bill The UK Department for International Trade invited the Modern Slavery PEC to provide expert input to support technical discussions amongst G7 officials on best practices to prevent, identify and eliminate forced labour in global supply chains. Those discussions contributed to G7 Trade Ministers issuing a joint statement Modern Slavery PEC has influenced the creation of the Global Commission on Modern Slavery and Human Trafficking, chaired by the former UK Prime Minister Theresa May. The Centre carried out the scoping study examining the case for establishing such a Commission, which guided its creation
Productivity Institute (Wave 2)	<ul style="list-style-type: none"> Mechanisms established to continue intersectoral collaboration: the Regional Productivity Forums, the Policy Commission, and the Productivity Lab Presentations to the (then) Department for Levelling Up, Housing and Communities (DLUHC) and reference to research findings in Levelling Up White Paper⁴⁴ Contributions to 'Jobs, growth and productivity after coronavirus' report⁴⁵ published by the Treasury Select Committee, plus oral evidence to committee

⁴⁴ <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom>

⁴⁵ <https://committees.parliament.uk/publications/23031/documents/168790/default/>

Case study	Progress towards outcomes (uptake)
Space Weather, Innovation, Measurement, Modelling and RISK (SWIMMR) (Wave 2)	<ul style="list-style-type: none"> Evidence to inform government programmes (e.g. DSIT's Help to Grow) The research and innovation outputs from the SWIMMR programme have been taken up by the Met Office and are actively being implemented to address the existing gap in the UK's space weather forecasting capability. Concrete examples include a new model to forecast Geomagnetically Induced Currents, which directly addresses risks to the national grid (and particularly relevant for DESNZ), and enhanced radiation models that are critical for aviation safety

Source: Technopolis (2025). Case studies

2.4.8 There is evidence of increased understanding between research councils and government departments on how to engage and collaborate beyond SPF, an expected outcome of SPF

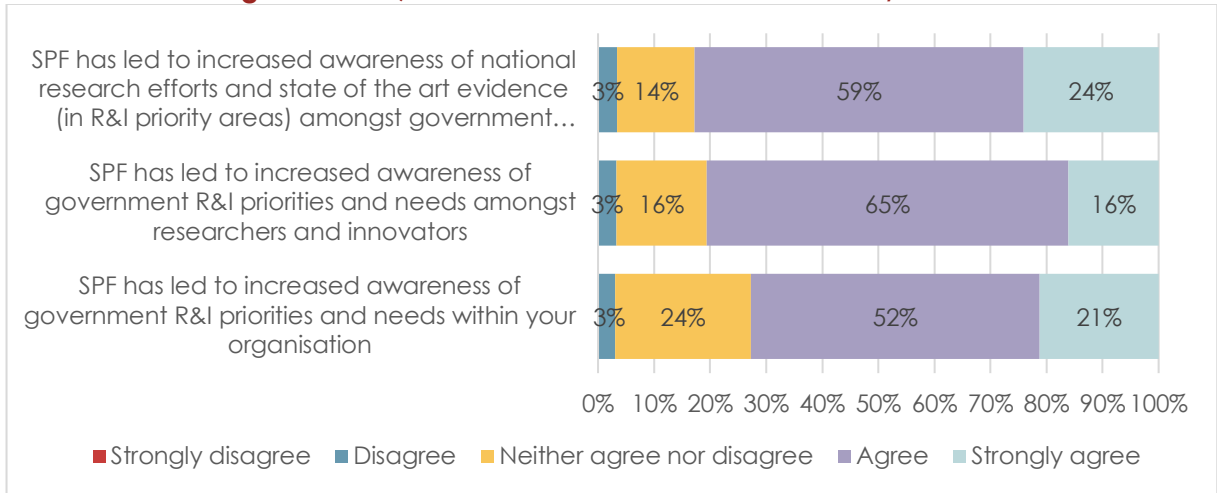
One of the expected outcomes of the Fund is to strengthen linkages and communication mechanisms/structures between and across partners (Councils, PSREs, government departments) involved in SPF programmes, including through new ways of working or collaborating. Collaboration between such organisations is not new, but SPF was expected to create a broader spectrum of sustained connections within the programme and across Councils and government departments so that e.g. government can turn to UKRI to support their R&I objectives.

As documented in Sections 2.1.2 and 2.4.2, most SPF programmes involve government departments and agencies and have implemented different ways of engaging with these representatives (inputting to business cases or programme design, participating in project selection and/or sitting on advisory boards), and to an extent that is not normally seen. Section 2.3.5 in particular cited a number of specific examples where SPF programmes have introduced new or enhanced mechanisms to involve government departments and agencies in implementation (e.g. helping to draft calls or providing accompanying government 'statements of need', or co-rating and commenting on proposals alongside peer reviewers).

Through these interactions, it was hoped the Fund would lead to increased understanding and awareness between government and research funders, and according to programme leads this has largely been achieved (see figure below). Specifically, three quarters of programme leads (73%) agreed that the SPF experience had increased Council's awareness of government R&I priorities, while even more (83%) believed that government departments had increased awareness of national research efforts and state of the art evidence in R&I priority areas. There is also a good correlation between the more positive responses to these questions and the reported level of government department/agency involvement during programme implementation.

SPF involvement has further contributed to increased R&I awareness within the wider community outside of UKRI Councils and government departments. A majority (81%) of programme leads believe that SPF had also contributed to increased awareness of government R&I priorities and needs amongst researchers and innovators.

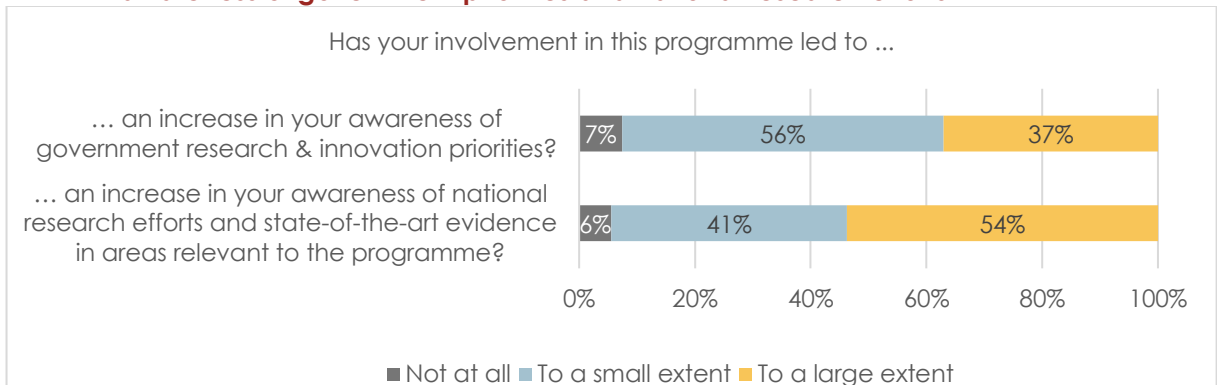
Figure 15 Extent to which government SPF has increased awareness and understanding between government, researchers and innovators and UKRI/Councils



Source: Technopolis, based on responses from 29 leads of SPF programmes (2025), (which excludes those who responded 'don't know')

Wider knowledge exchange was also reported by programme Advisory Board members when surveyed in 2025. Specifically, the vast majority (93%) of Board members (strongly/) agreed that their involvement in the programme contributed to an increase in their awareness of government R&I priorities. A similar proportion (94%) believe that it has also contributed to an increase in their awareness of national research efforts (Figure 16). There is a diverse range of representatives sitting on these groups, including academics, industry, UKRI, government, and PSREs.

Figure 16 Extent to which SPF involvement increased Advisory Board members' awareness of government priorities and national research efforts



Source: Technopolis, based on responses from 54 SPF programme Advisory Board members (2025), (which excludes those who responded 'don't know' and 'Not applicable')

The following examples were provided by government representatives interviewed in 2025 on the wider ecosystem effects of their department's involvement with SPF.

Examples from government representatives on how SPF involvement changed their approach to R&I programmes



Extreme Photonics Application Centre (EPAC): The MoD established a close working relationship with UKRI after co-funding the EPAC programme. As part of EPAC, a service level agreement was created between the two organisations, to allow MoD to invest money in other UKRI programmes. MoD has also aimed to work more closely with the Science and Technology Facilities Council (STFC) and sponsored some of the Centres for Doctoral Training set up by the Research Councils.



Trustworthy Autonomous Systems: Even though the programme is now complete, the TAS Hub formed a relationship with Good Systems (USA). Both are renowned leaders in Responsible and Trustworthy AI and Autonomous Systems and are now involved as part of the wider Responsible AI UK⁴⁶ (UK-wide, multidisciplinary network focused on ensuring that AI is ethical, responsible and beneficial for society).



UK Climate Resilience: Defra's involvement in the UKCR informed their strategy for developing the Maximising UK adaptation to climate change (MACC) programme.⁴⁷ The team co-funded, and co-developed MACC, a UKCR follow-on programme, to ensure that they will have stronger departmental involvement in the research direction throughout. Building on the knowledge and legacy of UKCR, the aim is to use research on climate risk and vulnerability and go further in terms of adaptive action in policy and practice. Having a cross-over of researchers and stakeholders participating in both programmes enabled the transfer of lessons learnt, such as embedding a monitoring, evaluation and learning framework from the start. Some of the key learnings around standards and taxonomy from UKCR were also transferred.

Source: Technopolis (2025), interviews with government representatives involved in SPF.

The Fund was also expected to lead to a better understanding of what works in inter-sectoral/cross-discipline collaboration, and for this to be codified, shared and socialised amongst partners to further facilitate effects or ecosystem change.

When surveyed for the interim evaluation in 2022, the great majority (92%) of SPF leads (strongly//) agreed that the experience has demonstrated how to effectively work and collaborate together with partners (through new or enhanced ways of working/collaborating), while a similar proportion (96%) also believe that this had demonstrated the benefits of working and collaborating together.

⁴⁶ https://rai.ac.uk/new_projects/tas-hub-and-good-systems-strategic-partnership/

⁴⁷ <https://www.ukri.org/opportunity/maximising-uk-adaptation-to-climate-change-research-projects/>

Wider impacts from this (in terms of wider ecosystem change) are mainly expected beyond the life of the SPF programmes, but there are already a number of examples emerging at this stage (shown below).

Examples of SPF experience that have or could inform future collaboration

Clean Air: This has contributed to approaches from other government departments wanting to develop a collaborative programme using the same model.

Constructing a Digital Environment: The environment team within ESRC brought together all champions from NERC SPF programmes that have an environmental science interest and ran workshops. This was to try to get best practice out of champions but also to share lessons learnt.

Landscape decisions: A trilateral group was formed between DEFRA, NERC, and the Royal Society to share experiences about the programme and improve the internal understanding of common R&I priorities.

MSPEC: The mechanisms and approach developed in the MSPEC for commissioning research that addresses longer term policy challenges has informed AHRC's discussions with other government departments regarding future investments. In particular, AHRC seeks to replicate the processes for the ways in which different stakeholders are involved in research commissioning and the research process itself, as well as how government departments are involved in the governance structure so that independence of academic research is maintained but also government needs are expressed. Discussions are ongoing, e.g. with DCMS regarding a policy and evidence centre for galleries, libraries, archives, and museums.

Sustainable Management of Marine Resources (SMMR): The inclusion of policy opinion on each of the SMMR proposals in the SMMR review process to help inform the review panel's final funding recommendations has now been adopted by the ECOWind research programme (NERC/Crown Estate) as it also needs to deliver strong policy-relevant end-user impact by end of the programme.

Source: Programme lead interviews and template responses at the baseline and interim evaluation stage, combined with meta-analysis of programme evaluation reports (2025).

2.4.9 The experience in SPF and evidence collected in this evaluation provides some useful reflections and lessons learnt with regards to addressing government R&I priorities

Evidence from SPF provides potential lessons that future interventions aiming to address government R&I priorities might usefully consider.

Building upon the process of identification of priorities: The process in wave 2 to identify government priorities should be maintained in future initiatives. Further use of the ARIs – which account for medium to long term needs – may also help to minimise issues relating to the shifting nature of government priorities, which can pose challenges for engagement with results towards the end of research programmes.

Strengthening co-development processes: While government representatives had an active role in steering SPF programmes and in some instances sat on selection panels, stronger co-design of programmes and joint co-development of project ideas was recommended by government representatives. More time dedicated to scoping programmes out and building detailed logic models was also expected to better support government insight and enhance planning around the expected economic, societal and environmental benefits of future programmes.

Planning for and dedicating resources through the life cycle of the programme to maintain engagement: Building relationships with relevant policymakers and similar end users requires dedicated staff resource, time and focus over time. In future, any similar mechanism that aims to address government priorities should (like SPF) ensure engagement at the design stage and during implementation, as well as provide the resources needed for extra coordination efforts

In particular, we have found evidence that maintaining user engagement throughout the lifetime of a programme can be a challenge (with some examples of government and industry involvement 'dropping' in the middle of the 'design – implementation – output/uptake' cycle, e.g. due to lower availability).

Consequently, efforts are needed to **ensure re-engagement in later phases, including a special focus on the nature, style and focus of outputs and dissemination activities** (e.g. developing synthesised policy briefs rather than/in addition to individual academic publications)

Building dissemination and insight within government: The process to secure programme champions within government departments should be maintained in future programmes. It was considered essential by government representatives for ensuring that research findings are well disseminated and helped secure government input at key programme stages. Building more programme secondments into government is also strongly encouraged to enable researchers to deliver programme findings first-hand, and support departments in embedding R&I findings in policy drafts.

The evaluation did not explore the costs to the system emerging from implementing SPF programmes, but it is worth noting that this degree of coordination and engagement is more costly, in comparison with initiatives involving fewer stakeholders.

2.5 First assessments of Value for Money suggest a positive return

For the purpose of this Fund level evaluation, and in line with the Evaluation Framework, the value for money assessment was set up as a meta-analysis of findings from programme level evaluations. This is mainly to account for the sheer diversity of the portfolio and the need for in-depth programme level analysis (with resources allocated at programme level for this purpose).

As such, we have collated and reviewed all programme-level evaluation reports that have been produced so far (33 reports, covering 22 programmes, as of April 2025). While the majority at this stage represent process evaluations or interim impact assessments, there were also five final impact evaluation reports available.⁴⁸ A small number (four) did attempt to monetise (some of) the benefits generated from SPF programmes, and while these different studies interpret and address value for money in different ways (e.g. return on investment, cost-effectiveness analysis), each of them find a positive return from the investment.

We first present the evidence on economic impact followed by Value for Money.

2.5.1 Economic impact

Multiple evaluation reports mentioned that it is still premature to fully assess the economic impact of the programmes. However, some stated that they expect programme activity to result in increased productivity and efficiency savings for companies, and the economy as a whole.

Some more specific examples of economic benefits were highlighted at the individual participant or business level. For instance, 87% of participating companies reported that their commercial opportunity greatly or moderately increased as a result from A4I participation. Participants in ASG reported that the programme contributed to enhanced career progression and opportunities. A small number of programmes spun-out start-up companies. For instance, the ASG programme has spun-out three companies, including Pometry which has successfully raised £2.1m in start-up funding and employs 12 full-time staff, and Quair, which now employs 15 people and in 2023 raised \$3.1m in VC funding.

2.5.2 Value for Money assessment

We looked across the available programme evaluations for attempts to monetise impacts and compare against costs. The paragraphs below summarise key findings from the examples identified, as well as the methodology used. We also include evidence from our case studies.

⁴⁸ At the time the Evaluation Framework was finalised (2021) there was the expectation that at least 12 programmes would have completed their final impact evaluations at this stage.

Value for Money assessment – examples from programme evaluations

Analysis for Innovators (A4I) | Wave 1 | Lead: Innovate UK (IUK)



The A4I programme was awarded A4I £14m in SPF funding, with its projects addressing areas that hamper company productivity, growth and competitiveness. The programme targeted UK businesses with a measurement problem requiring the innovative science and experience of laboratories to solve. As part of the evaluation, companies were asked about the financial benefits they had seen one year after project completion. Over a third (35%) of participants stated that they had already seen a financial benefit as a result of their A4I project, totalling £105.3m. The report has not scaled up the benefits to the full population of applicants.

Source: NPL, A4I Programme: Measurement and Evaluation Report, 2022.

EMBL-EBI | Wave 1 | Biotechnology & Biological Sciences Research Council (BBSRC)



The European Molecular Biology Laboratory's European Bioinformatics Institute (EMBL-EBI) was awarded £45m of SPF funding (in 2018) to enhance its technical and building infrastructure. The funding supported EMBL-EBI's existing and emerging data sources, including in areas of major interest, such as genomics and bioimaging.

A dedicated economic evaluation report explored multiple approaches to assessing the economic value and impact of the 44 open data resources managed by EMBL-EBI. Key findings are summarised below. However, note that those refer to all of the EMBL-EBI managed data resources, not just those enabled by SPF funding (and that evidence collected only covers the first 2 years of SPF funding):

- Contingent valuation was used to measure the value users place on a freely provided service by asking what they would be willing to pay in a hypothetical market situation. For EMBL-EBI managed data resources that was an estimated £1.25bn per annum. This gives a sense of the minimum value of EMBL-EBI's managed data resources to users, equivalent to 11 times estimated total costs.
- Researchers reported that EMBL-EBI managed data resources made their research significantly more efficient. This benefit to users and their funders is estimated to be worth between £2.6bn and £11bn per annum worldwide.
- The annual use of EMBL-EBI managed data resources contributed to the wider realisation of research impacts conservatively estimated to be worth some £2.2bn annually, or up to £15bn over 30 years in net present value.

Source: Data-driven discovery: the value and impact of EMBL-EBI, 2021.⁴⁹

Ensuring the Security of Digital Technologies at the Periphery (SDTaP) | EPSRC



The SDTaP programme was awarded £31m from SPF in 2018. Its objective is to support the development of a safe and secure Internet of Things (IoT) and protect critical

⁴⁹ <https://www.embl.org/documents/wp-content/uploads/2021/10/EMBL-EBI-impact-report-2021.pdf>

applications from sophisticated cyber threats. The report finds that increasing IoT growth and adoption can have significant economic impacts in terms of improved productivity. The potential benefits of IoT are estimated as being potentially substantial, (10% to 50%+ for the Edge computing and IoT sector). IoT could also have substantial productivity benefits in other sectors. The report finds that by supporting the adoption of IoT across industries, the SDTaP programme has a potential to deliver a high Return-on-Investment. Based on stakeholder survey results, the programme may generate between £0.7 to 4.4bn of potential economic gains to the UK.⁵⁰

Source: RSM, SDTaP: Interim Evaluation, 2023.



Towards a National Collection (TaNC) | Wave 2 | Lead: AHRC

TaNC's objective is to take the first steps towards creating a unified virtual national collection of the UK's museums, archives, libraries, and galleries by dissolving barriers between different collections. It was awarded £18.9m from SPF. In line with that, the report aims to estimate the Total Economic Value of a future unified digital collection of cultural heritage assets in the UK. The approach involved the deployment of contingent valuation surveys to elicit respondents' willingness to pay for a hypothetical unified collection of cultural heritage assets across three distinct groups (the public, academics and researchers and individuals with a 'special interest' in cultural heritage). Key findings include:

- analysis of questionnaires completed by over 8,000 individuals from the general population found an average willingness to pay (in terms of an increase in annual taxes) of around £8 per person to support the development, maintenance, and free accessibility of a unified digital collection of cultural heritage assets for the UK
- by extrapolating these findings to the full UK adult population, the Total Economic Value for the service is around £425m per annum
- additionally, the average willingness to pay for the proposed service (in terms of a monthly subscription to access the service) is £13 per person per month for academics and researchers and £3 per person per month for individuals with special interest in cultural heritage

Source: Alma Economics, TaNC: Total Economic Value of Unified Digital Collection, July 2024.⁵¹

The programme case studies also provide an example of commercial benefits emerging from another of the SPF programmes (although this is not monetised).

⁵⁰ The reports notes that the analysis is not fully robust and based on a number of assumptions such as substantial indirect impact. The results are indicative of potential impacts.

⁵¹ <https://zenodo.org/records/12755041>



Clean Air | Wave 1&2 | Leads: NERC and Met Office

SPF awarded £42m to the Clean Air programme across two waves. There are examples of innovations emerging from these programmes that have successfully bridged the gap between scientific research and user-oriented health technologies. One example is Nooku (formerly Family Air), which has developed a personalised indoor air quality monitoring system aimed at families with vulnerable individuals, including those living with asthma or COPD. The system utilises IoT-enabled sensors alongside a user-friendly app to provide real-time data and tailored feedback. Beyond its health benefits, Nooku has demonstrated strong commercial potential, with products now stocked by major retailers including Currys, Amazon, and Best Buy. To give a sense of the scale of the commercial opportunity, the global air quality monitoring system market size was projected to reach \$8.89bn by 2030.⁵² So even 0.1% market participation could equate to a \$9.9m revenue in a given year.

Source: Technopolis (2025). Case studies

⁵² Air Quality Monitoring System Market (2025–2030)

3 Conclusions and recommendations

3.1 Conclusions

For this conclusions section, we return to the main outcomes that were expected to emerge from SPF (across the Fund's objectives) and provide an overall assessment of the evidence of progress against these (as presented in the main body of this report).

Given the nature of SPF, the outcomes are influenced by the Fund, but are mostly delivered by the programmes themselves, and – as presented in the ToC – they are expected to fully materialise after programme completion. As such, outcomes have started to emerge, but it is still early to draw final conclusions at this stage.

We have broken each of the main outcomes into sub-components where we would expect to see progress for the outcome to be achieved. The analysis is then based on triangulating evidence from the evaluation, drawn from different sources.

Our conclusions are that all of the assessment/tests presented have been met, with the exception of two (the demonstration and uptake elements of the first outcome), where there is limited evidence of these components having been realised so far.

Outcome: Strengthening linkages and communication mechanisms/structures between and across partners (Councils, PSREs, government) involved in SPF programmes, including through new ways of working/collaborating. Improved understanding of what works in these collaborations (codified, shared, socialised).

Components	Assessment/ Test	Conclusions
Composition	SPF programmes involve intersectoral collaboration (between Councils, government departments and PSREs) in their design and implementation	Composition analysis of programmes shows that this has been achieved. Additionally, evidence from programme leads suggest that involvement of government departments has been sustained over time, throughout the life of programmes (even if maintaining this was sometimes challenging).
Focus	SPF programmes address government R&I priorities that would not have been funded otherwise	Evidence on spend and on uptake of research results shows that SPF has enabled R&I that addresses government priorities. Other sources of funding are available that address many of the same areas, but there is evidence of stronger collaboration through SPF, as well as higher uptake of research outputs in policy documents in comparison with what is usually the case.
Demonstration and/or codification	SPF has demonstrated new or enhanced ways of working/collaborating between the partners involved	Evidence from programme leads, workshops and case studies makes clear that programmes have tested enhanced ways of working/collaborating between the partners, demonstrated the benefits, and sometimes contributed to follow-on efforts. However, it is unclear if this learning and experience has been disseminated more widely (i.e. beyond partners).
Uptake	The lessons from SPF programmes (about ways of working/collaborating) are being implemented outside SPF	There are some concrete examples, but such wider ecosystem change is mainly expected beyond the life of SPF programmes.

Outcome: Improved awareness/understanding of government R&I priorities amongst UKRI/Councils, and of national research efforts and evidence in government

Components	Assessment/ Test	Conclusions
Council awareness	SPF has contributed to increased awareness of government R&I priorities	73% of SPF leads believe Councils have increased awareness of government R&I priorities as a result of SPF. Feedback from government representatives suggests SPF outputs are aligned with priorities and generate strong interest.
Government department awareness	SPF has contributed to increased awareness of national research efforts and state of the art evidence (in R&I priority areas) among government departments	Government departments and agencies have maintained close involvement in most programmes throughout their implementation. Programmes have also been active in ensuring that emerging findings are distributed to relevant government departments through various channels and mechanisms. A majority (83%) of programme leads agreed that their SPF programme had increased awareness of national research efforts and state of the art evidence amongst government departments.

Outcome: R&I outputs (knowledge, solutions, tools) generated with support from the Fund are accessed and taken up by the R&I community and by end users, including for policy and decision-making across government

Components	Assessment/ Test	Commentary
Composition 1	SPF involves intersectoral collaboration in programme design, implementation and governance	The composition analysis shows that this has been achieved.
Composition 2	SPF projects involve two or more disciplines (that tend not to collaborate with each other)	The composition analysis and bibliometrics shows that this has been achieved.
MIDRI applications attracted	Calls have been able to attract high quality MIDRI proposals	Analysis of grant applications shows that SPF has attracted a high number of MIDRI application.
New or enhanced mechanisms	SPF programmes put in place new or enhanced processes to assess MIDRI proposals for competitive calls	Evidence from leads, workshops and case studies shows programmes have put in place new or enhanced processes to assess MIDRI. This has then translated into a high degree of MIDRI-ness amongst SPF projects.
Outputs	MIDRI nature of the programme has contributed to the creation of MIDRI publications	Bibliometric data suggest proportionally high number of MIDRI publications emerging from SPF (in comparison with UKRI and UK benchmarks). Most programmes have also undertaken activities that bring together knowledge and insights from different research activities.
Relevance	R&I outputs emerging from the programme are of better quality/relevance to potential end-users (incl. government departments/decision makers)	Strong alignment across most programmes with government priorities, as well as widespread ongoing involvement of government in implementation of programmes has helped ensure the relevance of research activities and outputs.
Access	R&I outputs emerging from the programme have been disseminated among end-users (incl. government departments)	Various mechanisms have been put in place to facilitate synthesis and dissemination by almost all programmes.
Uptake (Users)	R&I outputs emerging from the programme are being used, taken-up and/or implemented by end-users (incl. government)	Bibliometric data show high uptake in policy documents, and evidence from case studies, interviews with government representatives and programme evaluation reports already showcase many concrete examples.

3.2 Recommendations

3.2.1 Recommendations for future similar activities

The experiences of SPF and evidence collected in the evaluation provide some lessons learnt that future interventions should consider (as presented in more detail in Section 2.3.8 and 2.4.9 above).

With regard to **supporting and enabling MIDRI**, this includes the need to:

- standardise processes to further facilitate cross-council collaboration
- invest time and resources in setting up (new) MIDRI partnerships
- allow sufficient time for effective integration of knowledge across disciplines

With regard to **addressing government R&I priorities**, this includes the need to:

- build upon the process of priority identification used for second wave of SPF bids
- strengthen co-development processes between government and councils via dedicating more time to programme scoping
- plan for and dedicate resources throughout the programme to maintain engagement
- ensure strong (and targeted) engagement with government in later phases of projects and programmes, including consideration of the appropriate nature of outputs and dissemination activities to engage with these potential end users

3.2.2 Recommendations for future similar evaluations

Multistage evaluations. The development of the SPF evaluation over time, alongside the implementation of the Fund (Evaluation Framework developed in 2020, Baseline and early findings undertaken in 2021, Interim evaluation undertaken in 2022 and a Final evaluation undertaken in 2025) has allowed it to:

- Collect timely evidence on key indicators (including baselines)
- Incorporate learning from early stages of the evaluation (in relation to findings and the methodological approach)
- Provide early evidence to inform investment decisions

Timing of final evaluation. Ideally a final evaluation of Fund or portfolio of programmes would be conducted when all programmes have been finalised. However, the experience of conducting this and other similar evaluations (e.g. UKRI Fund for International Collaboration) also shows that there is **a trade-off in multi-stage evaluations**: as more time passes it is possible to capture more (and more robust) evidence on outputs and outcomes, but it also becomes increasingly difficult to capture comprehensive primary data (especially at institutional level), as people change positions or move onto different activities and priorities as programmes close. Also, as time passes and policy priority changes, the original focus and evaluation questions may become dated. In the case of SPF, the last programme is due to end in 2029/30 (and the last project in 2030) which could be deemed as too long a period to capture (useful) evidence. All these different forces may call for:

- The implementation of a dynamic approach to capturing primary data as the end of a Fund and its programmes approaches (rather than at a single point, at the final evaluation stage)
- Focusing later stages of evaluation on mobilising secondary data sources, and limiting primary data collection
- Resourcing (Fund) evaluation studies such that the majority of efforts are dedicated to earlier stages (early findings and interim evaluation)

Mobilising programme level evaluations. At the outset, the Fund level evaluation was designed to mobilise evidence from programme level evaluations. This approach was deemed appropriate not only because of the diversity of the portfolio, but also because the resources allocated to these evaluations (~£3m) meant that they were in better position to explore outputs and outcomes, as well as value for money, in more depth. However, and despite efforts from the Fund evaluation team and UKRI, the individual evaluations did not cover Fund level questions in a systematic way. Many were also delayed, with only five programmes concluding their final evaluations ahead of the final Fund level evaluation (in contrast with at least 12 originally foreseen at this stage). Going forward UKRI may consider:

- Making it a requirement of funding that evaluations capture key Fund level questions.
- Delaying final Fund evaluations until at least half of the programme portfolio has conducted their own final evaluations

List of Acronyms and Abbreviations

A4I	Analysis for Innovators (programme)
AI	Artificial Intelligence
AHRC	Arts and Humanities Research Council
AMHDM	Adolescence, Mental Health and the Developing Mind (programme)
ARI	Areas of Research Interest
ASG	AI for Science and Government (programme)
BBSRC	Biotechnology and Biological Sciences Research Council
BEIS	(Department for) Business, Energy and Industrial Strategy
CA-FC	Clean Air – Future Challenges (programme)
CCRA	Climate Change Risk Assessments
CDE	Constructing a Digital Environment (programme)
CE	Circular Economy
CSA	Chief Scientific Advisor
DCMS	Department for Digital, Culture, Media and Sports
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport
DHSC	Department of Health and Social Care
DLUHC	Department for Levelling Up, Housing and Communities
DSIT	Department for Science, Innovation and Technology
DWP	Department for Work and Pensions
ECR	Early Career Researcher
EMBL-EBI	European Molecular Biology Laboratory's European Bioinformatics Institute
EPAC	Extreme Photonics Application Centre
ESRC	Economic and Social Research Council
EPSRC	Engineering and Physical Sciences Research Council
FIC	Fund for International Collaboration
FoR	Fields of Research
FWCS	Field Weighted Citation Score
GCHQ	Government Communications Headquarters
GO-Science	Government Office for Science
GtR	Gateway to Research
HIP	Highly Interdisciplinary Publications
HMP	Highly Multidisciplinary Publications
II	Interdisciplinarity Index
IUK	Innovate UK
ISCF	Industrial Strategy Challenge Funds
JCHR	Human Rights Joint Committee
LwM	Living with Machines (programme)



MACC	Maximising UK Adaptation to Climate Change (programme)
MI	Multidisciplinarity Index
MIDRI	Multi- and Inter-Disciplinary Research and Innovation
MoD	Ministry of Defence
MRC	Medical Research Council
MSPEC	Modern Slavery and Human Rights Policy and Evidence Centre
MSS	Marine Scotland Science
NCSC	National Cyber Security Centre
NERC	Natural Environment Research Council
NFCS	National Framework for Climate Service
NGO	Non-Governmental Organisation
NPIF	National Productivity Investment Fund
NPL	National Physical Laboratory
NNL	National Nuclear Laboratory
NTC	National Timing Centre
PNT	Position, Navigation and Timing
PRL	Policy Related Literature
PSRE	Public Sector Research Establishment
QTFP	Quantum Technologies for Fundamental Physics (programme)
R&I	Research and Innovation
REF	Research Excellence Framework
RSAB	Research and Stakeholder Advisory Board
SDTaP	Ensuring the Security of Digital Technologies at the Periphery (programme)
SiPF	Strength in Places Fund
SMMR	Sustainable Management of Marine Resources (programme)
SPF	Strategic Priorities Fund
STFC	Science and Technology Facilities Council
SWIMMR	Space Weather, Innovation, Measurement, Modelling and Risk (programme)
TAS	Trustworthy Autonomous Systems (programme)
ToC	Theory of Change
TUFS	Transforming the UK Food System (programme)
UKAEA	UK Atomic Energy Agency
UKCR	UK Climate Resilience (programme)
UKRI	UK Research and Innovation
UKSA	UK Space Agency



technopolis
group 

www.technopolis-group.com

