Department for
Business, Energy
& Industrial Strategy

The Newton Fund

Final Evaluation Report

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TETRA TECH
International Development

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Disclaimer

The views expressed in this report are those of the evaluators. They do not represent those of the Department for Business, Energy and Industrial Strategy, the Newton Fund or of any of the individuals and organisations referred to in the report.

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Contents

Abbreviations

AMR	Antimicrobial Resistance
BBSRC	Biotechnology and Biological Sciences Research Council
BEIS	Department for Business, Energy and Industrial Strategy
BIS	Department for Business, Innovation and Skills
CENAN	National Centre for Food and Nutrition
CONICYT	Comisión Nacional de Investigación Científica y Tecnológica
CSSF	Conflict, Security and Stability Fund
CSSP	Climate Science for Service Partnership
DFID	Department for International Development
DIT	Department for International Trade
DLG	Delivery and Learning Group
DP	Delivery Partner
EQ	Evaluation Question
ESRC	Economic and Social Research Council
FAO	Food and Agriculture Organisation
FCDO	Foreign, Commonwealth and Development Office
FDI	Foreign Direct Investment
FWCI	Field Weighted Citation Index
FY	Financial Year
GCRF	Global Challenges Research Fund
GRI	Global Research and Innovation Team
HDI	Historically Disadvantaged Institutions
HMG	Her Majesty's Government
IAEA	International Atomic Energy Agency
IAPP	Industry-Academia Partnerships
IARC	International Agency for Research on Cancer
ICAI	Independent Commission for Aid Impact
ICF	International Climate Finance
ICT	In-Country Team
IP	Intellectual Property
IPR	Intellectual Property Rights
KII	Key Informant Interviews
KPI	Key Performance Indicators

LIF	Leaders in Innovation Fellowship
LMIC	Lower Middle-Income Countries
MoU	Memorandum of Understanding
MRC	Medical Research Council
MEL	Monitoring, Evaluation and Learning
MTE	Mid-Term Evaluation
ODA	Official Development Assistance
ODART	Official Development Aid Financial and Programme Reporting Transformation
OECD-DAC	Organisation for Economic Co-Operation and Development - Development Assistance Committee
PAFiC	Precision Agriculture for Family-farms in China
PDEP	Professional Development and Engagement Programme
PhD	Doctor of Philosophy
PI	Principal Investigator
PMO	Programme Management Office
R&D	Research and Development
R&I	Research and Innovation
RCUK	Research Councils UK
RMT	Research Management Team
S&I	Science and Innovation
SAG	Strategic Advisory Board
SCOR	Strategic Coherence of ODA-funded Research
SDGs	Sustainable Development Goals
SIDA	Swedish Development Agency
SIN	Science and Innovation Network
SME	Small and Medium-sized Enterprises
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology, and Innovation
TAG	Technical Advisory Group
ToC	Theory of Change
TVET	Technical, Vocational Education and Training
UKRI	UK Research and Innovation
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
VfM	Value for Money

Executive Summary

The Newton Fund has delivered research and innovation activities worth over £585m across 18 Partner Countries since 2014. These activities have fostered equitable partnerships[1] involving almost 2,000 overseas partners in over 5,400 grant-assisted projects and generated over 5,700 research publications. The Fund is achieving its short-term outcomes – with signs of progress towards meeting its more ambitious longer-term impact which is expected to be achieved beyond the current Fund cycle (2014-21).

Background

Launched in April 2014, the Newton Fund is a seven year £735m United Kingdom (UK) Official Development Assistance (ODA) fund which aims to promote the economic, sustainable development and social welfare of partnering countries through research and innovation. It is managed by the Department for Business, Energy and Industrial Strategy (BEIS), and delivered through UK Delivery Partners[2] in collaboration with in-country funding partners.

The rationale for the Newton Fund is based on the premise that investing in science and innovation research capacity will drive economic growth and help tackle development challenges. Its main purpose is to promote economic development and welfare in Partner Countries by improving their research and innovation capacity and unlocking further funding by developing innovative solutions that support poverty alleviation. An expected secondary objective is to secure benefits to the UK through further research opportunities for the UK research and innovation base, improving UK innovation skills and unlocking opportunities for trade.

The evaluation

Tetra Tech International Development was appointed in 2015 by the then Department of Business, Innovation and Skills (BIS)[3] to conduct a longitudinal evaluation of the Newton Fund. The overall purpose was to determine the extent to which the Fund has, or will, contribute to actual or potential increases in economic development and welfare, and reductions in poverty in Partner Countries. The Fund is only seven years into implementation; a very short timeframe to observe changes in policy and practice, and thus equitable growth and welfare, from generating new evidence through research and innovation.

The Newton Fund involves a variety of different types of activities. Some are designed to have a relatively direct effect on target groups (e.g. scientists and businesses) in specific countries while other activities are designed to have a less direct but more pervasive and widespread effect (e.g. embedding an innovative culture in institutions and governments). The challenge of attribution is compounded by the fact that the Fund will implement overlapping projects under different pillars, with multiple goals that are intended to reinforce one another. With no viable

[1] Relationships which demonstrate fair opportunity, process, and sharing of benefits, and outcomes.
[2] UK Research and Innovation (UKRI); Academy of Medical Sciences; Royal Society; Royal Academy of Engineering; British Academy; British Council and the Met Office.
[3] The Department for Business, Innovation and Skills (BIS) was merged with the Department of Energy and Climate Change (DECC) to create the Department of Business, Energy, and Industrial Strategy (BEIS) in July 2016.

counterfactual options considered feasible the evaluation adopted a theory-based approach, applying case-based portfolio evaluation[4] to assess the Fund against six Evaluation Questions (EQs) and a Theory of Change (ToC).

Box 1: Theory-based evaluation

A theory-based evaluation is based on an explicit ToC that explains the theory of a development intervention or set of interventions. Theory based evaluations have two distinct parts: a conceptual part, which concentrates on developing the ToC or logic model and using it to guide the evaluation; and a second part that involves collecting evidence to establish whether and/or how an intervention produced the desired changes. The Newton Fund ToC was initially designed in 2016, and re-designed in 2020 in collaboration with BEIS, In-Country Teams and Delivery Partners. It sets out the expected levels of change (outputs, interim and long-term outcomes) which this evaluation is assessing achievement of or progress towards.

This is the final evaluation report presenting the findings, conclusions and recommendations based on data collection and analysis carried out between January 2020 and April 2021. A range of evidence sources were used, including: 11 Partner Country case studies, 17 Partner Country End Line Assessments, an In-Country Partner Consultation, a pilot Value for Money (VFM) assessment, a UK Benefits Study, a Review of Approaches to Gender Equality, a Research Quality Review and an Award Holder Online and Telephone Survey. The main report provides extensive methodological detail, analysis and findings which are assessed against the strength of available evidence. Key findings and evidence are summarised below for each Evaluation Question, with conclusions and recommendations summarised to provide insights on how the Fund could improve in any future cycles beyond 2021.

Key findings

Evaluation Question 1: Do the design and objectives of the Newton Fund address the problem stated in line with needs?

Key Evidence Points

- Activities sampled were found to be targeting economic development, welfare, or poverty issues, except for some People Pillar collaborations which have a more tenuous link to addressing development challenges. Sampled activities have reached their intended recipients in the research and innovation ecosystem - predominantly academics, PhD students and researchers, with smaller numbers of private, non-profit, and public sector recipients.

- 36% of Newton Fund UK Award Holders are female according to available data. There is no evidence available to determine if there are gender differences in terms of benefits realised at this time. While the Fund had no specific objectives to achieve gender equality, BEIS has published a statement on Gender Equality and introduced mandatory gender requirements since October 2020.

[4] Case-based evaluation involves the 'systematic generation and analysis of cases' - where cases are framed at different levels of analysis project, programme, country, or Fund. See Annex 2 for further detail.

- BEIS has taken steps to improve overall consistency by updating ODA guidance and publishing the Newton Fund Operational Framework (August 2020), however, we found limited evidence of a strategic Fund level approach to identifying country needs, leveraging regional influence, and aligning activities with intended impacts to maximise the Fund's relevance. In-country partners consider the Fund relevant to their needs although country strategies (produced in 2016) were found to lack detail for driving activity in priority areas.

Overall Finding

The design and objectives of the Newton Fund are addressing the needs of Partner Countries. Activities and outputs are consistent with the intended objectives of the Fund targeting economic development, welfare, or poverty issues. Whilst the lack of a fund strategy[5], and delays to country strategies,[6] represent missed opportunities to maximise the relevance of Fund activities from the Fund's inception, and award holder gender disparities are evident, BEIS has taken steps to improve consistency – i.e. updating ODA guidance, improving the approach to gender equality, and publishing an operational framework.

Evaluation Question 2: To what extent has the Newton Fund complemented, and contributed to, the work of other stakeholders?

Key Evidence Points

- The Newton Fund partnership model has facilitated effective coordination to deliver the Fund which has ensured a shared vision and ownership of priorities with Partner Countries. Partnerships have helped establish networks of actors across Partner Countries – linking research bodies, universities, start-ups and businesses, and industry-academia – because of the Fund's multidisciplinary focus, which has enabled coordination between disciplines in a way that is not always possible or incentivised by other funding sources.
- We found early signs of the uptake of best practice among local and national institutions - only a minority of respondents provided examples of use of research by authorities or institutions in practice. Most respondents focused on the potential value of their research findings but did not provide clear indications that these were being considered or used in practice.
- We found limited evidence that BEIS' coherence efforts (with other HMG departments) were enhancing Newton Fund results – beyond encouraging the sharing of learning. Similarly, while the Newton Fund and the Global Challenges Research Fund (GCRF) share the same oversight structure, there is no evidence of additionality because of this shared structure that would not otherwise have been achieved with separate structures.

Overall Finding

[5] A Fund strategy was recommended by ICAI in their 2019 review of the Newton Fund. BEIS did not produce a strategy at that time, owing to the timing towards the end of the agreed funding period to 2021 and in advance of decisions on the future of the Fund post-2021.
[6] Country strategies for each Partner Country were produced in 2016. A planned refresh in 2019 was not completed, again owing to the timing towards the end of the agreed funding period and in advance of decisions on the future of the Fund post-2021.

The Newton Fund has complemented, and contributed to, the work of other stakeholders in the sector through its partnerships and interdisciplinarity which has yielded results that would not be achieved through a unilateral funding model. UK and in-country Delivery Partners have successfully coordinated to deliver Fund activities, and there are early signs of uptake of best practice. BEIS works in partnership with other HMG departments to achieve Fund coherence, and the Newton Fund's shared oversight and management structure promotes complementarity with the GCRF. There is no evidence of added value as a result of the cross-Fund delivery model.

Evaluation Question 3: Has the Newton Fund achieved its objectives[7] (interim outcomes)?

Key Evidence Points

- We found that at least 3,228 collaborations and partnerships have been formed which have led to over 5,700 publications. Award Holders strongly agreed that working in partnership has improved the quality of their work, developed their research and translational skills, and facilitated access to resources, while the usefulness and applicability of sampled research outputs were found to contribute to solving development challenges.
- The online survey revealed that 84% of non-UK Award Holders from industry and technology sectors reported that their capacity to translate research into products, solutions or policies had improved; 83% had been able to establish new institutional and commercial links; 89% reported their profile was raised in the field of applied research and product development; and 76% indicated their capacity to commercialise innovative products or solutions had improved.
- There is strong evidence that the Fund has developed the capacity of individuals and institutions in Partner Countries and the UK, but there is less evidence of strategic activity to drive targeted, systems-level change to establish and maintain a global ecosystem to capitalise on Fund activities. Fund activities are found to be building capacity to commercialise innovations with at least 164 patents and 77 spin outs formed, which suggests activities have leveraged investment, although the extent of this is unknown.
- Early-stage innovation projects progressing to commercialisation were found to be largely contingent on securing further funding owing to the associated time lag. We found little evidence of the translation of research and learning across contexts at present, and we found that there is no mechanism or platform for sharing these outputs.
- We found strong evidence among non-UK respondents that the Fund has contributed towards making the UK a partner of choice and has positively positioned the UK in the research and innovation space. UK Delivery Partners were very positive about the impact of the Fund in building partnerships, including extending the work of some UK bodies into countries they had not previously worked in, or developing their networks in the country.

Overall Finding

The Fund is showing promising signs of meeting some of its objectives (interim outcomes) including developing effective, multidisciplinary research and partnerships and

[7] Objectives, for the purpose of this evaluation, are identified at the interim outcome level in the Newton Fund Theory of Change. Section 5 details the evaluation findings under each outcome.

improving translational research and innovation capacities between the UK and Partner Countries. The lack of clear strategy for capitalising on project-level activities at a system or transnational level means it has yet to show clear signs of meeting its more ambitious objectives - to strengthen the global research and innovation ecosystem or act as a global platform for sharing learning and strengthening policies.

Evaluation Question 4: To what extent has the Newton Fund delivered efficiently?

Key Evidence Points

- A Fund level assessment of VFM has not been possible during the evaluation period due to the lack of systematic Fund level data and the need to adapt BEIS' VFM rubric[8] to apply beyond the project level. However, we found that over 70% of online survey respondents reported that the funding had 'definitely' made it possible for them to do new research or business activities – this was echoed by respondents across sources - and - that a fifth of non-UK respondents indicated that partnerships with UK institutions would not have been possible in the absence of the Fund.
- The Fund has leveraged matched financial contributions from partners estimated to be at least 30% of the overall value of the Fund, in addition to further non-financial support.
- We found three key reasons the Fund is producing additionality: where there is a lack of alternative funding; where the model has enabled new or stronger forms of collaboration, including funding newer less traditional types of collaboration; and, where the matched effort requirement has enabled the Fund to leverage additional resources from partner funding agencies.
- Early piloting of BEIS' VFM rubric found that there is good VFM being delivered at the project level with larger research pillar projects being the most relevant to development challenge and small-scale people pillar projects being the most equitable.

Overall Finding

Most Newton Fund activities sampled would not have taken place without the resources contributed by the Fund. The Fund is producing additionality, and indirect secondary benefits to the UK are emerging. A Fund level VFM assessment has not been possible (due to the lack of systematic Fund level data and the need to adapt BEIS' VFM rubric framework beyond the project level). However, early pilots of the rubric suggest there is good project level VFM.

Evaluation Question 5: To what extent has the Newton Fund delivered results[9] (long-term outcomes)?

Key Evidence Points

- We found signs that Fund activities are beginning to influence country level policy or practice in India, China and Chile – although the majority of projects cited it was too soon to

[8] A rubric framework sets out criteria and standards for different levels of performance and describes what performance would look like at each level.
[9] Results, for the purpose of this evaluation, are identified at the long-term outcome level in the Newton Fund Theory of Change. Section 5 details the evaluation findings under each long-term outcome.

determine influence. Several 'translation' challenges were found including that it is too early; that it takes time; that many projects did not include translation in their design or budgets; and that there are often contextual barriers inhibiting translation. 10% of online survey respondents indicated that their project had resulted in an observed societal impact while 17% indicated that impact that could not be observed yet. Over 20% of telephone survey respondents cited 'Positive contributions to health', and 'increased commercialisation/production of low-cost solutions or raising income' as areas of impact – while over 40% cited 'gender equality' and 'environmental sustainability' as areas of impact.

- We found evidence across all sources that partnerships are equitable and, in some countries, (Indonesia, Vietnam and the Philippines), they have helped establish similar funding mechanisms and formalise relationships at government levels. We found that partnerships have created new opportunities for collaboration between the UK and Partner Countries, but it is too soon to determine if they have unlocked trade and investment. All in-country partners expressed a strong desire to continue collaborating given the UK's leading reputation in research and innovation.
- We found emerging evidence of UK Benefits including a stronger UK research base and the generation of knowledge in addressing global challenges relevant to the UK such as climate change.
- We found that the Fund has contributed to positioning the UK as an international advocate/global leader in research and innovation with over 90% of non-UK-based online survey respondents reporting that they perceived UK research and innovation as 'excellent' or 'good', while 80% indicated their perception had 'definitely' or 'probably' improved because of participation in the Fund.

Overall Finding

There are signs the Newton Fund is on track to achieving its long-term outcomes – influencing country level policy and/or practice; the formation of equitable partnerships; the creation of new opportunities for collaboration between the UK and Partner Countries; and strengthening the reputation of UK research and innovation. However, it is too soon to determine the full extent to which the Fund has (or will) achieve socio-economic development and whether it will lead to enhanced prospects for trade and new investment opportunities.

Evaluation Question 6: Are the benefits achieved by the Newton Fund likely to be sustained?

Key Evidence Points

- We found that some elements of sustainability are evident across the sample, with some projects securing follow-on funding, continuing to collaborate, or producing publications or other material outputs, which has provided a basis for use by the wider research community.
- We also found that in-country presence, continued investment, clear engagement mechanisms, continued desirability of the UK as partner, and exit strategies are all necessary pre-conditions for sustainability.

- We found no evidence of Fund or country-level exit strategies, which in the case of Chile, led to an abrupt reduction in research and innovation collaboration with the UK.
- Projects that are at earlier stages of progress highlighted that the need to secure further funding is a barrier to their progress towards translating research into impact. This presents a risk to the realisation of the Fund's long-term impacts.
- A third of UK and non-UK online survey respondents (Award Holders) plan to continue collaborating after the funding ends which indicates some desire to continue among stakeholders. Similarly, there is strong interest among all respondents in wider bilateral collaboration, with 93% of non-UK and 83% of UK-based online survey respondents indicating that they would be willing to collaborate with partners in the opposite country in future.

Overall Finding

Some elements of sustainability are emerging, such as securing follow-on funding; continuing to collaborate or producing publications or other material outputs which provide a durable basis for continuation by design. However, the early-stage nature of some projects and the need to secure further funding to progress towards impact is presenting a risk to the sustainability of some project benefits.

Conclusions

Newton Fund activities are tailored to differing contexts where research and innovation capacities vary enormously. Our findings suggest a need to think beyond activities and consider the strategic direction and mechanisms that underpin successful research capacity development and catalyse these for innovation. Detailed conclusions are outline in Section 6.

1. **The Newton Fund is achieving some of its interim outcomes, with signs of progression towards its more ambitious longer-term outcomes (i.e. influence on policy or practice).**

These interim and long-term outcomes include:

- developing effective, multidisciplinary research and partnerships which address key development challenges;
- improving research, innovation and translational capacities between the UK and Partner Countries;
- establishing the UK as a partner of choice;
- influencing policy and practice changes in some Partner Countries;
- establishing equitable partnerships, and ecosystems that incentivise innovation and policy application; and
- positioning the UK as an international advocate/global leader in research and innovation

2. **The Newton Fund is relevant to the enormously varied needs of Partner Countries, but the lack of overall strategic direction risks undermining the progress made and the potential to leverage synergies at the country, regional and global levels.**

The Fund has supported activities addressing a wide range of global challenges through a relatively devolved selection and project-level approach, with limited strategic direction as to how this diverse set of activities would collectively contribute to sustained positive socio-economic outcomes in Partner Countries, or on how Fund investments would have a mutual benefit for the UK.

3. **Newton Fund activities are coherent and complementary with Partner Country priorities. It is successfully coordinating partnerships to deliver activities through multidisciplinary approaches that would not have been achieved through a unilateral funding model.**

Partnerships are complementing the work of Partner Country stakeholders at the project-, country- and regional-level. In some instances, research projects have encouraged coordination between wider actors in Partner Country research and innovation systems.

4. **Follow-on funding is necessary to continue collaborations and partnerships and, for some projects to progress towards impact.**

The ability for Newton Fund participants to access funding (whether from BEIS or other sources) is necessary for building on and, in some cases, realising the intended objectives and benefits of project activity. This includes the need for funding for new collaborations and partnerships to maintain UK-Partner Country academic networks. Given the early-stage nature of some Newton Fund projects, additional funding may be required for these outputs to progress to a stage at which they can result in socio-economic impact.

5. **There is scope for BEIS to better promote synergies between the Newton Fund and other HMG funds to leverage any potential catalytic effects.**

The Newton Fund shares a common oversight and management structure with the GCRF, which is the UK's largest ODA research and innovation fund. While BEIS works in partnership with other HMG departments to achieve Fund coherence, there is scope for BEIS to promote more internal and external synergies and greater strategic alignment. This includes clearly differentiating the Newton Fund from the Government's other Funds, and how it focuses on driving impact through early-stage research and innovation in Low- and Middle-Income Countries, and how this difference can complement the work done by other Funds.

6. **The Newton Fund has improved its commitment to gender equality. Diversity levels among UK Award Holders are weighted towards men (two-thirds), and while this reflects the situation in the wider UK research landscape, this could be improved.**

BEIS introduced mandatory gender equality statements for all Fund activities in October 2020 – indicating a commitment to gender equality – recognising the fact that the Fund did not set out to achieve any gender related objectives from the outset. Gender and ethnicity disaggregated data is not currently collected for non-UK Award Holders, which is a gap in the evidence base.

7. **There are emerging signs the Newton Fund is generating value. Value for Money at Fund level as a whole is less well evidenced than at project level.**

There is emerging project level-evidence that the Fund is generating value, although it is too early to fully assess the impact or benefits realised. A Fund level VFM assessment was not

possible due to the lack of systematic Fund level data and the need to adapt BEIS' VFM rubric framework to apply at Fund level. Sampled activities were found to be additional, i.e. they would not have taken place without the Fund. The Fund has leveraged matched financial contributions from partners which are estimated to be at least 30% of the overall value of the Fund, in addition to further non-financial support.

8. **There is no Fund level sustainability (or exit) strategy in place. This will compromise the likelihood of sustainable impact being achieved and may negatively affect the UK's global reputation in research and innovation. In-country presence, follow-on funding and exit strategies are all necessary pre-conditions for sustainability.**

Newton Fund in-country presence, follow-on funding (given the time lag associated with translating research into impact), and clear exit strategies are important factors for the achievement of sustainable longer-term benefits. While there is some evidence of projects securing follow-on funding, continuing to collaborate, or producing material research outputs, some projects are at risk of not realising their potential owing to a drop off in funding. The lack of exit strategy has been a challenge in Chile[10], where the likelihood of sustained benefits is expected to be significantly lower than initially expected.

9. **The lack of a comprehensive Fund-level data monitoring system hampers monitoring efforts and limits future evaluative activities.[11]**

A harmonised approach to gathering Fund level monitoring data is being developed, although at a relatively late stage in the Fund cycle. Monitoring trackers (such as BEIS' activity tracker) were gradually put in place during the first year of operation and improved over time, albeit with data gaps and limitations in consistency. BEIS has taken steps to address the issue, including introducing Cross-Fund Key Performance Indicators (KPIs) in 2020 and launching the Reporting Official Development Assistance (RODA) system. BEIS intends to further develop the system's capacity for Monitoring, Evaluation and Learning (MEL) reporting functions.

Recommendations

Our seven recommendations build on the conclusions, providing practical pointers for any future phase of the Newton Fund beyond 2021. Detailed recommendations are outlined in Section 7.

1. **The Newton Fund, or any future similar Funds, should put in place an overarching strategy to clearly identify its purpose and the outcomes and impacts expected from across the portfolio.**

A Fund-level strategy would provide clarity on the Fund's overall primary and secondary purposes and how they interact. It should articulate the trajectory from research and innovation to impact, and ultimately 'use' in terms of how the Fund's activities influence policy or practice. It would also provide further clarity on how the Fund mainstreams diversity, inclusion and gender equality. The strategy would identify synergies between Partner Countries and regions, and with other Funds. It would set out a Fund exit strategy and transitioning arrangements for

[10] The first Partner Country to graduate from the OECD's Development Assistance Committee's list of countries eligible to receive ODA.
[11] Earlier phases of this evaluation and ICAI's Performance Review (2019) raised the lack of Fund monitoring data as a key challenge.

supporting new partnerships with a view to sustainability. The strategy would revisit and update the Fund's Theory of Change.

2. **The Newton Fund should prioritise developing new Partner Country strategies in collaboration with funding and Delivery Partners, to ensure a clear purpose and intent within each country context, and to ensure that each focus on the sustainability of Fund achievements to date.**

Partner Country strategies should identify strategic country-level research and innovation capacity, and thematic priorities. The country strategies should be collaborative to ensure they are well embedded in-country and reflecting country priorities. The strategies would provide more direction to Delivery Partners and Award Holders when designing projects. They would articulate country-level exit strategies and transitioning of support. The strategies would include a country-level Theory of Change.

3. **Retain the key elements of the equitable partnership model in any future Newton Fund cycle.**

The partnership model is highly valued, mutually beneficial, and unique to each Partner Country and Delivery Partner. The requirement of matched effort is an attractive feature that has, in some cases, secured firm commitment and leverage from country-level institutions which would otherwise have been difficult to achieve. The model facilitates the co-design of priorities, engages senior level buy-in and reflects partners' interests. Crucially, it enables critical success factors, such as the co-creation of research programmes, the exchange of knowledge and skills, and the creation of linkages for wider engagement in the research and innovation ecosystem to influence design and delivery.

4. **The Newton Fund should now focus more on ways to better enable projects to influence practice or policy by helping projects to access the next stage of funding or other support they need to progress towards impact.**

Continued engagement with stakeholders and securing follow-on funding are critical success factors for pathways to achieving impact. Delivery Partners should be more strategic in the framing of programmes and calls to align with the objectives of the Fund. The Fund introduced the Newton Impact Scheme in 2019, which is a positive step towards enhancing continuity along the research and innovation to impact trajectory. The Scheme should be expanded to provide a platform for translation for projects to access for further funding based on evidence from comprehensive monitoring data.

5. **The Newton Fund should develop and extend its Value for Money rubric framework for use at Fund level.**

To assess VFM on a regular basis, the Fund should collect relevant monitoring data in a harmonised way (see recommendation 6). The existing rubric framework should be adapted for use at the Fund-level involving Delivery Partners, the systematic sampling of qualitative data, cost-effectiveness benchmarking and how VFM insights should be disseminated and acted upon.

6. **The Newton Fund should further expand the recently launched RODA system to capture wider MEL progress reporting data for accountability, management, and evaluation purposes.**

The recently launched RODA system (which focuses on financial reporting) should be further developed to capture MEL reporting requirements. These should include a uniform set of indicators at Fund-level and complement the published Cross-Fund Key Performance

Indicators. An expanded MEL reporting system should define the annual reporting requirements of Delivery Partner outputs and gather data on matched contributions to inform future assessments of additionality and ODA compliance. Its scope should include gathering data on Partner Country Award Holders, unsuccessful applicants as well as data on instances of successful follow-on funding.

7. **The Newton Fund should commission a future impact evaluation to understand what impact it has produced - positive and negative, intended and unintended, direct and indirect.**

An impact evaluation would investigate causal attribution, i.e. the extent to which observed effects are attributable to the Newton Fund. It would take place in years 8-12 of the Fund's cycle to ensure impacts have had sufficient time to develop. Its use should be clearly articulated in advance, for example its relevance for accountability and learning purposes within a wider Departmental policy or ODA portfolio strategy. Possible effects because of Covid-19 should also be investigated.

1. Introduction

1.1. Purpose of this report

This report presents the findings from Tetra Tech International Development's Final Evaluation of the Newton Fund. It provides evidence on the relevance, coherence, effectiveness, efficiency, emerging results, and sustainability of the Fund. It also provides recommendations on Fund processes, areas for improvement and good practice. It does not provide a performance assessment of individual Newton Fund projects or partners. The main intended users of the evaluation are the Department of Business, Energy, and Industrial Strategy (BEIS), specifically the Newton Fund's management team, the UK Delivery Partners, and in-country partners responsible for delivering the Fund. Insights may also be relevant to BEIS' Global Challenges Research Fund (GCRF); to a wider audience of accountability bodies; to funders, commissioners and implementers working on building research and innovation capacity through partnerships; programmes developing evidence bases of 'what works' in various sectors; and finally, the role partnership plays in fostering innovation.

The Newton Fund aimed to improve social, economic, and sustainable development of Partner Countries through bilateral research and innovation partnerships that address global development challenges. Funded by BEIS, from the UK's Official Development Assistance (ODA)[12], the Newton Fund had a total UK budget of £735 million over a seven-year programme cycle (April 2014 to March 2021). It aimed to strengthen research and innovation capacity to deliver socio-economic development impact by building sustainable relationships between the UK and Partner Countries. By placing emphasis on partnerships as a model of co-funded bilateral technical assistance, the Fund enabled UK researchers to collaborate with researchers from Partner Countries to work on the most pressing development challenges.

The Newton Fund evaluation was funded by BEIS, conducted by Tetra Tech International Development, and ran from August 2015 to June 2021. The evaluation mandate aligns with the seven-year duration of the Fund from 2014 to 2021[13], however, it began sixteen months after implementation had started. The evaluation was sequenced according to the following four phases:

- **Phase 1: Inception** (September - October 2015) which established the overall scope, approach, and budget.
- **Phase 2: Initial Analysis** (November 2015 - March 2016) which produced the Evaluation Strategy, Fund-level Theory of Change (ToC); fifteen (secondary source) Partner Country Baseline Studies and a review of monitoring systems.

[12] Official development assistance (ODA) – commonly known as overseas aid – is when support, expertise or finance is supplied by one government to help the people of another country. Available at: Official Development Assistance - GOV.UK (www.gov.uk)

[13] The Evaluation contract was signed August 2015 and initially designed to run till 2019. The contract was extended to 2021, aligning with the extension to the Fund's implementation cycle from five to seven years in 2015.

- **Phase 3: Mid-term Evaluation** (April 2017 – July 2018) which included a mid-cycle Newton Fund evaluation[14] and a process evaluation.[15]
- **Phase 4: Final Evaluation:** (December 2019 – June 21) which involved a re-design of the Evaluation Strategy[16]; a re-design of the Fund ToC; seven primary data modules and the production of this final evaluation report.

Each phase had a focus on both accountability and learning, as expressed in its objective and purpose:

- To establish whether the goal of the Newton Fund – to develop science and innovation partnerships that promote the economic development and welfare of Partner Countries – was being delivered.
- To determine whether it was being delivered in a way that represents Value For Money (VFM).

1.2. Structure

This final report is structured as follows:

- **Section 2** provides the context to the Newton Fund, including the UK policy background, the Newton Fund structure, and evolution of the Newton Fund to date;
- **Section 3** outlines the evaluation purpose, scope and methods employed; the evaluation components and our strength of evidence approach;
- **Section 4** details the Newton Fund results hierarchy and the re-designed Newton Fund ToC which frame the evaluation;
- **Section 5** presents the Fund-level evidence and key findings for each evaluation question;
- **Section 6** presents our overarching conclusions derived from the findings;
- **Section 7** provides seven recommendations, designed to help take the insights from the evaluation into account to strengthen any future Fund cycles beyond 2021.

This Final Evaluation report sits alongside:

- its annexes (on Newton Fund expenditure, Approach and Methodology; Sampling Approaches, Theory of Changes Narrative, and References), and
- a Review of Approaches to Gender Equality (published), 11 Partner Country Case Studies, a Research Quality Review, a UK Benefits Study, and 17 Partner Country Endline Assessment Reports to be published separately.

[14] Mid-Term Evaluation of Newton Fund (2018). Available at: Resources | Newton Fund and GCRF (newton-gcrf.org)
[15] Coffey Newton Fund Process Evaluation Report (2018). Available at: BEIS Newton Fund Process Evaluation report for publication on NF site.pdf.
[16] Tetra Tech (2019) Final Evaluation Strategy – Internal document.

Throughout the report, several terms are consistently used. For clarity and consistency around their meaning, Box 2 provides a list of definitions.

Box 2: Definition of key terms used in the report

Portfolio - a collection of funds, interventions or initiatives that together contribute to a common set of strategic objectives and have a common underlying logic.

Fund – an individual Fund (i.e. The Newton Fund) or sub-unit within a broader portfolio. Funds are managed using practices and procedures to oversee the disbursement of grants to DPs (i.e. recipients of grant funds). This includes reporting, monitoring and evaluation of grants.

Programme - funding instruments for the distribution of Newton Fund funding. DPs lead, design and manage programmes.

Call – instances where DPs invite applications for funding under a given programme. There may be multiple calls under one programme or there may only be a single call under a programme (in which case 'call' and 'programme' are synonymous).

Project – activity-level awards made by DPs, which include Award Holders, principal investigators, and co-investigators etc. Projects have vertical lines of accountability to the DP, share a core unifying element, but their specific objectives and interventions may be quite different.

Delivery Partner (DP) – UK Delivery Partners that implement the Newton Fund. They develop and run calls, allocate and manage funds received from the Newton Fund.

In-Country Funding Partner – work with UK Delivery Partners to co-design and issue calls for research and innovation proposals in each Newton Fund Partner Country.

Award Holder – UK and non-UK researchers that receive grant awards from DPs to carry out research and innovation initiatives.

Equitable Partnerships - are defined as relationships which demonstrate fair opportunity, process, and sharing of benefits, and outcomes**.**

2. Context

2.1. Policy background

BEIS' primary objective for ODA research and innovation funding was to reduce poverty by generating and putting into use knowledge and technology to address development challenges and advance development for the poorest people and countries.[17] This was intended to be achieved by growing the research and innovation capacity of Low- and Middle-Income Countries (LMICs), contributing to the continued strength of the UK's research and innovation system, and supporting wider prosperity and global influence. Building partnerships between researchers in the UK and researchers, policy makers, the private sector and development initiatives in LMICs is cited as critical to achieving this objective. As the second highest ODA spending department (total spend including GCRF and International Climate Finance was £957.4 million in 2019)[18], BEIS delivers two core policy interventions – The Newton Fund and the GCRF - and shares responsibility for the delivery of the cross-government International Climate Finance (ICF).[19]

The UK Aid Strategy's (2015) goal is to further sustainable development and welfare of LMICs while placing international development at the heart of national security and foreign policy.[20] The strategy recognises the critical role the UK's research and innovation system can play in tackling global challenges, from investment in research and innovative solutions to developing capacity through collaboration between researchers within a global research system.

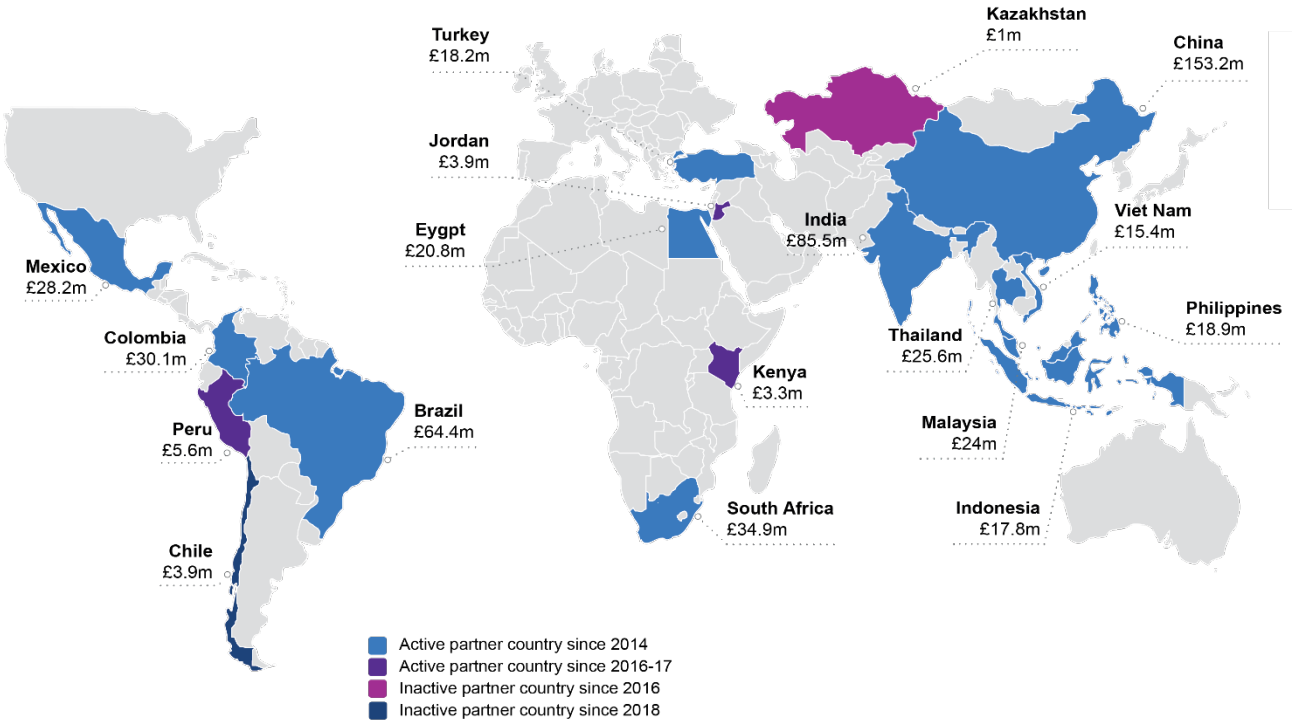
2.2. Overview of the Fund

The Newton Fund is a £735m budgeted UK ODA commitment which, through bilateral and regional research and innovation partnerships, aims to promote the sustainable economic development and social welfare of partnering countries.[21] It seeks to strengthen research and innovation capacity to deliver socio-economic development impact by building sustainable relationships between the UK and Partner Countries. Beginning in 2014, the Fund has had 18 bilateral partnerships (see **Figure 1** below) with 16 currently active. Countries selected to enter partnerships are all (or were at the time of selection) on the Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD-DAC) list of ODA-eligible countries. See Annex 1 for detail on the selection criteria and Newton Fund Partner Countries.

[17] BEIS Research and Innovation: Official Development Assistance Statement of Intent (2017). Available https://www.gov.uk/government/publications/beis-official-development-assistance-research-and-innovation/beis-official-development-assistance-oda-research-and-innovation-statement-of-intent
[18] BEIS Annual Report and accounts (2019-20). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922625/CCS0320287242-001_BEIS_Annual_Report-V11.pdf
[19] The ICF is delivered by three government Departments (DFID, BEIS and Defra) between 2016 and 2021.
[20] UK HM Treasury/DFID (2015). Available at: UK aid: tackling global challenges in the national interest (publishing.service.gov.uk)
[21] BEIS Newton Fund: Operational Framework (2020). Available at: Newton Fund: operational framework - GOV.UK (www.gov.uk)

A distinctive feature of the Fund is the requirement for matched effort from Partner Countries, which usually equates to matched funding or in-kind contributions. Matched effort is expected to help jointly accelerate the impact of the Fund's work through the joint agreement of funding priorities and mutual interests, which differentiates it from traditional bilateral development assistance.

Figure 1: Newton Fund Partner Countries estimated funding distribution (2014-21)[22]



The Fund is managed by BEIS and delivered through UK DPs in collaboration with in-country funding partners. DPs were selected by BEIS through a competitive process to implement programmes that are aligned to the objectives of the Fund. The UK and in-country DPs co-design and co-fund programmes, co-deliver calls and select projects to fund (typically through competitive, peer-reviewed selection processes).[23] This means that specific programmes are designed and projects selected by the specialist research and innovation bodies in the UK and in Partner Countries, while BEIS retains a coordinating role in order to set overarching priority areas and build on the activity of DPs at a portfolio level (including through BEIS staff based in-country). There are seven UK DPs representing a wide range of research and innovation institutions - UK Research and Innovation (UKRI)[24]; Academy of Medical Sciences; Royal Society; Royal Academy of Engineering; British Academy; British Council and

[22] Data from the March 2021 Newton Fund Activity Tracker capturing actual spend up to and including financial year 2020/21. The tracker is subject to final adjustments and notes a caveat associated with the spend for Chile – this is further explained in Annex 1. The three-year Newton-Picarte Fund ran from 2014 -17 before Chile graduated from the Development Assistance Committee (DAC) list and became ineligible to receive Official Development Assistance (ODA) funds. Chile, however, remains a Newton Fund partner on regional initiatives.
[23] A smaller number of calls (such as some individual fellowship awards) are run directly by the UK DPs without in-country partners.
[24] UKRI is a non-departmental public body sponsored by BEIS. It was established in 2018 by the UK Higher Education and Research Act (2017) to bring together seven research councils, Innovate UK, and the research and knowledge exchange functions of the Higher Education Funding Council for England (HEFCE). Source: BEIS (2018). Available at: UKRI Framework Document.

the Met Office.[25] Annex 1 contains a detailed breakdown of Newton Fund estimated expenditure by country, delivery partner and sector activity, up to and including financial year 2020-21.

Box 3: Newton Fund Estimated Expenditure 2014-21[26]

The total estimated Fund expenditure is £585.8m[27] during the period April 2014-December 2020. China has benefitted from the largest volume of Newton funding overall through joint UK-China programmes; approximately £153.2m of spend benefitted China by Financial Year (FY) 2020/21, followed by India at £85.5m and Brazil at £64.4m. Expenditure varies significantly between UK Delivery Partners. UKRI and its seven Research Councils[28] have received the largest funding amount, totalling £342.3m, followed by the British Council totalling £86m and the Met Office totalling £67.8m.

The matched cash contribution from Partner Countries is estimated at £136m during the period April 2014-July 20. Matched effort data is not currently monitored by the Fund. This figure is estimated from available monitoring data (FY14/15-19/20) provided by 7 UK Delivery Partners.[29]

The primary objective of the Newton Fund is to promote the economic development and welfare of either the Partner Countries, or, through working with the Partner Country to address development problems around the world. It sought to do so by increasing their scientific capacity and unlocking further funding to support poverty alleviation.[30] **An expected secondary benefit is to secure benefits to the UK** – which was to be achieved by presenting further research opportunities for the UK science base, improving the skills and activity of UK innovators and researchers, and unlocking opportunities for trade. These primary and secondary objectives were not further defined which, in the absence of any detail as to how they were expected to be achieved, did not provide a sufficient strategy for the Fund's operation.

The Fund delivered three main types of activities, categorised by pillar:

- capacity building, fellowships, mobility schemes (**People Pillar**);

[25] The Met Office is an Executive Agency of, and a Trading Fund within, BEIS. The Secretary of State for BEIS holds formal responsibility for the Met Office, with oversight provided by the Minister of State for Universities, Science, Research, and Innovation. BEIS' Permanent Secretary is the Principal Accounting Officer. Source: BEIS (2019) Met Office Framework Document. Available at: Met Office Framework 2019 (publishing.service.gov.uk)
[26] The BEIS 'Activity Tracker' is an Excel-based internal monitoring tool by BEIS and updated quarterly by the UK DPs. The March 2021 tracker presents expenditure for seven financial years 2014/15 to 2020/21. Detail on the specific data considerations and caveats associated with the Tracker are outlined in Annex 1. Previous versions of the Tracker were used in the 2018 MTE report and the sampling methodology for the 2021 Final Evaluation Partner Country Case Studies.
[27] The Fund had a total budget of £735 million of ODA funding for 2014-21. The total spend figure quoted in Box 1 is lower for several reasons; there will be some underspend in projects; there are non-DP costs that are not included in these figures and in 2020 there were ODA cuts which impacted some Newton activities. The expenditure figure quoted is also missing the final quarter of the financial year 2020/21.
[28] Economic and Social Research Council; Arts and Humanities Research Council; Medical Research Council; Biotechnology and Biological Sciences Research Council; Engineering and Physical Sciences Research Council; Natural Environment Research Council; Science and Technology Facilities Council.
[29] Estimate figure from available monitoring data (FY14/15-19/20) provided by five UK Delivery Partners only (British Council, Academy of Medical sciences, Royal Academy of Engineering - Industry Academia Partnership Programme, UKRI and the Met Office)
[30] Newton Fund official website. Available at: About - Newton Fund

- research collaborations (**Research Pillar**); and
- innovation partnerships and challenge funds to develop innovative solutions to development issues (**Translation Pillar**).

The Newton Fund's rationale is based on the premise that investing in science and innovation research capacity should drive economic growth, and subsequently help tackle social challenges. Covering 16 active countries, it is designed to address a funding gap owing to the perceived risk and potential returns on innovative research projects for businesses, academics, and investors. The sustainability of partnerships, collaborations and relationships developed through the Newton Fund will be a critical success factor. To achieve its objectives, relationships are expected to last beyond the current life cycle of the Fund (2014-21) with the aim of achieving systemic improvement in science and innovation capacity in Partner Countries in the longer term.

2.2.1. Evolution

The Newton Fund launched in April 2014 committing £375 million of UK ODA over 5 years. The 2013 business case outlines the need for the UK to respond to the changing international science and innovation landscape.[31]The primary objective of the Fund is to promote the economic development and welfare of Partner Countries with benefits to the UK presented as secondary.[32]

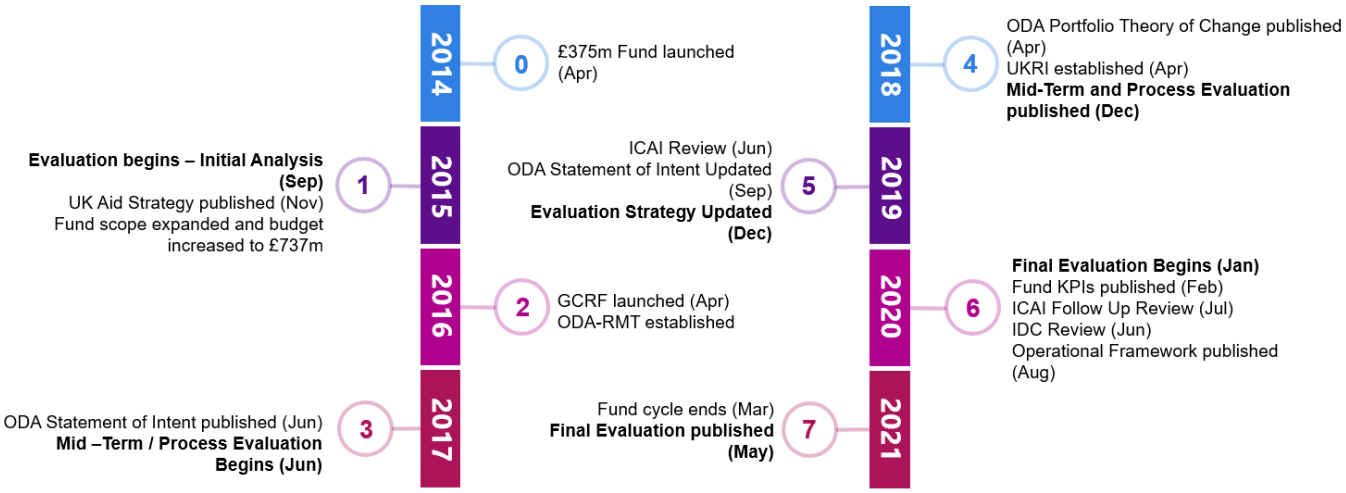
Since the launch, there have been several important developments regarding the Fund's management and objectives. Initially designed as a £375m, 5-year Fund targeting 15 countries, the Newton Fund was extended to a 7-year cycle (ending March 2021) with an additional investment totalling £735 million - coinciding with the publication of the new UK Aid Strategy in 2015.[33] [34] In 2017, BEIS published its first Research and Innovation ODA Statement of Intent[35], which was followed in 2018 by the publication of BEIS' ODA Portfolio Theory of Change[36] and the establishment of UKRI.[37]

In 2021, a follow-up review by the Independent Commission for Aid Impact (ICAI)[38], found that the Newton Funds policies and practices have been transformed since the first review in 2019. However, concerns pertaining to the design of the Fund at the

[31] The business case presents several reasons (information failures, co-ordination failures, risks, and uncertainties) for which these innovation networks between the UK and other countries are unlikely to organically materialise. Based on this rationale, emerging economies with potential for scientific excellence are to be targeted for partnerships.
[32] This shift in emphasis was agreed by the (then) Newton Fund Board in late 2014.
[33] HM Treasury and Department for International Development (2015). Available at: UK aid: tackling global challenges in the national interest (publishing.service.gov.uk)
[34] Three partner countries were also added – Kenya, Jordan, and Peru. This decision was made at the 2015 Spending Review.
[35] BEIS (2017) Research and Innovation: Official Development Assistance Statement of Intent. Available at: https://www.gov.uk/government/publications/beis-official-development-assistance-research-and-innovation/beis-official-development-assistance-oda-research-and-innovation-statement-of-intent
[36] BEIS (2018) Newton Fund and GCRF Annual Report 2017-18. Available at: https://www.newton-gcrf.org/resources/
[37] UKRI is a non-departmental public body that directs research and innovation funding, funded through BEIS. It was established by the UK Higher Education and Research Act (2017) bringing together seven research councils, Innovate UK, and the research and knowledge exchange functions of the Higher Education Funding Council for England (HEFCE). UKRI's main purpose is to invest in and facilitate research and innovation activities across the UK.
[38] ICAI (2021) Follow-Up Review of 2019-21 reports Available at: (ICAI-follow-up-2019-20-reviews.pdf (independent.gov.uk)

strategic level, remain. The review concluded that BEIS has made significant reforms, which 'greatly improved' its ODA management practices although this has happened very late in the Fund's lifespan. These 'very positive' reforms include: creating a robust joint governance structure (for the Newton Fund and GCRF); improving the approach to gender equality, diversity and inclusion; introducing safeguards for ODA eligibility and attention to development impact; a strong Monitoring, Evaluation and Learning (MEL) framework; and improving data collection and transparency on Fund activities. These improvements are expected to increase the impact and value for money of ODA-funded research in future. At the strategic level, ICAI continues to raise concerns around development impact as the primary purpose and tied aid in the design of the Fund. In June 2020, a Subcommittee report of the International Development Committee advised that *'before any extension of the Fund within the next Spending Review process, BEIS should also make sure it is able to demonstrate that it is measuring impact and value for money across all its ODA spending from inception'.*[39] The follow-up review also recommended that BEIS should, in any future iteration of the Fund, revisit the model to address ICAI's concerns around primary purpose and tied aid.

Figure 2: Newton Fund Timeline 2014 – 21



2.2.2. Oversight and accountability

BEIS' ODA Research and Innovation Board[40] is responsible for the Newton Fund's policy level strategic direction, coherence, holding DPs to account and overseeing evaluation plans. The Board is chaired by the Minister for Science, Research and Innovation, to provide advice to the Minister on policy direction. The Portfolio and Operations Management Board supports the ODA Research and Innovation Board[41] providing Fund level management oversight, decision-making and coordinating cross-government engagement. A Technical Advisory Group (TAG)[42] was re-established in mid-2020 to provide evaluation guidance and strategic advice. Bodies such as ICAI and the Parliament's International Development

[39] International Development Sub-Committee on the Work of the Independent Commission for Aid Impact - Summary - Committees - UK Parliament (2021). Available at: https://committees.parliament.uk/committee/347/international-development-subcommittee-on-the-work-of-the-independent-commission-for-aid-impact/

[40] Chaired by the UK Minister for Universities, Science, Research, and Innovation.

[41] Established in 2017, the Portfolio and Operational Management Board comprises of BEIS Programme Management; Country Leads; UK DFID; FCO SIN Challenge Leaders.

[42] BEIS convened, reports to the Portfolio and Operations Management Board – replaced the Evaluation Advisory Group which was not functional between 2016-mid 2020.

Committee and Science and Technology Committee have an official scrutiny role, in line with standard Parliamentary scrutiny processes.

The Global Research and Innovation Team (GRI), within BEIS's International Research and Innovation Directorate, is accountable for the strategic direction and delivery of the Fund (including monitoring and evaluation). These functions are carried out by two teams: the ODA Research and Innovation Team[43] which is situated in BEIS and oversees policy, strategy and analysis, and the ODA Research Management Team (RMT) and Programme Management Office (PMO)[44] which are hosted by UKRI and oversee operational Fund management and the Delivery Learning Group (DLG). ODA RMT has a Fund level monitoring and evaluation function responsible for financial oversight, compliance, impact tracking and analysis of how the Fund is implemented and managed by DPs.

GRI's Regional Leads are responsible for bilateral partnerships (including with Newton Fund Partner Countries). They coordinate and support Newton Fund In-Country Teams (ICTs) who work with DPs to establish connections and ensure support from local delivery and funding partners.[45] ICTs perform a variety of roles depending on the context of the host country; the extent of pre-existing innovation infrastructure networks and relationships; the existing presence of Delivery Partners in-country; and, the nature of the team put in place (some being based within Embassies, others led by Delivery Partners). Their role is described as a 'bridge' between BEIS, the UK DPs and Newton Fund Partner Countries and can include negotiating partnerships but also identifying possible opportunities and synergies.[46]

2.2.3. Synergies with other funds

The Newton Fund is part of BEIS' overall ODA portfolio, designed to achieve the objectives in BEIS' ODA Statement of Intent (2017). BEIS' oversight function aims to ensure the Fund aligns with policy and is coherent with other HMG ODA funding[47] by working in partnership with the UK Foreign, Commonwealth and Development Office (FCDO) Research and Evidence Division, HMG Treasury and across government more broadly.[48] This involves coordination through the Strategic Coherence of ODA-funded Research (SCOR) Board[49] which aims to build coherence across HMG's ODA funded development, science, and research.

The Newton Fund and the Global Challenges Research Fund are complementary but differ. They share the same objectives – mobilising UK science and research to address development challenges – however, the mechanisms by which they will achieve these objectives differ. They are both overseen by BEIS, share most of the same UK DPs,[50] but they differ in size, scope, timing, and funding modalities.

[43] Based in BEIS London Office.
[44] ODA RMT and PMO are based in the BEIS Swindon Office and are hosted by UKRI.
[45] Local funding partners, in many cases, are dedicated Newton Fund staff based in country (often in UK embassies), whilst in others the ICT function is performed by representatives of UK Delivery Partners.
[46] Activities in South-East Asia are supported by a central hub based in Singapore.
[47] For example: FCDO Research, the Prosperity Fund, Fleming Fund, Ross Fund, and the Soft Power Fund.
[48] BEIS (2017) Research and Innovation: Official Development Assistance Statement of Intent. Available at: https://www.gov.uk/government/publications/beis-official-development-assistance-research-and-innovation/beis-official-development-assistance-oda-research-and-innovation-statement-of-intent
[49] SCOR Board was established in 2017 to coordinate ODA flows across government by DFID; DOH; BEIS; and UKRI.
[50] The UK Met Office is exclusively a Newton Fund Delivery Partner, whereas the UK Space Agency is exclusively a GCRF Delivery Partner.

The **Newton Fund**, (£735m budget 2014-2021), supports bilateral science partnerships with 16 developing countries across Africa, Asia and Latin America. Each partnership is co-designed, and match funded – with UK funding used to support the mobilisation of UK science and research expertise to work with Partner Countries. All funding is allocated to UK Delivery Partners, who collaborate with researchers and counterparts in the relevant Partner Countries. The Newton Fund currently supports ~500 active projects. The **Global Challenges Research Fund** (£1.5bn budget 2016-21) supports challenge-led disciplinary and interdisciplinary research that addresses the UN's Sustainable Development Goals (SDGs) in over 70 ODA-eligible countries. It also provides funding for agile responses to emergencies, such as Covid-19, and funding for capacity building programmes such as early career researcher fellowships in sub-Saharan Africa. GCRF currently supports ~700 active projects. GCRF has no requirements to partner with host country governments or for match funding.

3. Purpose, Scope and Methodology

3.1. Evaluation context

Tetra Tech International Development[51] was appointed by the then Department of Business, Innovation and Skills (BIS)[52] to undertake a longitudinal evaluation of the Newton Fund in August 2015. The evaluation mandate aligns with the seven-year duration of the Fund from 2014 to 2021[53], however, it began sixteen months after implementation had started. As a result, the evaluation's Partner Country Baseline Assessments use secondary data sources from Year 1.[54]

There are no 'natural' points in the Fund's cycle for the evaluation to assess the impact of 'sets of activities'. Partner Countries have different sets of priorities, each with differing levels of absorptive capacity, and receiving different levels of funding annually. The Fund is designed to be implemented and managed through continuous assessment of emerging activities developed by DPs and annual expenditure cycles. The absence of a "Year 0" or Inception Phase has meant that some aspects of the Fund were developed in response to identified needs, or issues arising. Monitoring trackers (such as BEIS' activity tracker) were gradually put in place during the first year of operation. While BEIS has since published Fund Key Performance Indicators (KPIs) and launched the Reporting Official Development Assistance (RODA) system in 2020 to improve data collection and transparency. The RODA system was implemented too late to produce data for this stage of the evaluation, which has instead drawn on the BEIS activity tracker and our own data harvesting from DPs. The Newton Fund evaluation was sequenced according to the following four phases:

- **Phase 1: Inception** (September - October 2015) which established the overall scope, approach, and budget.

[51] Coffey International Development Ltd. rebranded as Tetra Tech International Development Ltd in January 2020.
[52] The Department for Business, Innovation and Skills (BIS) was merged with the Department of Energy and Climate Change (DECC) created the Department of Business, Energy, and Industrial Strategy (BEIS) in July 2016.
[53] The Evaluation contract was signed August 2015 and initially designed to run till 2019. The contract was extended to 2021, aligning with the extension to the Fund's implementation cycle from five to seven years in 2015.
[54] Secondary sources include Scopus, Scimago Journal and Rank, the UNESCO Institute for Statistics (UIS) the World Intellectual Property Organization and long-term studies such as the Global Competitiveness Index (GCI).

- **Phase 2: Initial Analysis** (November 2015 - March 2016) which produced the Evaluation Strategy, Fund level Theory of Change (ToC); fifteen (secondary source) Partner Country Baseline Studies and a review of monitoring systems.
- **Phase 3: Mid-Term Evaluation (MTE)** (April 2017 – July 2018) which included a mid-cycle Newton Fund evaluation[55] and a process evaluation.[56]
- **Phase 4: Final Evaluation:** (December 2019 – June 21) which involved a re-design of the Evaluation Strategy[57]; a re-design of the Fund ToC; seven primary data modules and the production of the final evaluation report.

The evaluation team was overseen by the Newton Fund Board and an Evaluation Expert Advisory Group for the first two phases. Since then, BEIS' Research and Innovation ODA Analysis Team oversaw the evaluation supported by a Technical Advisory Group (TAG).[58]

3.1.1. Purpose

The overall aim of the evaluation is to establish whether the goal of the Newton Fund – to develop science and innovation partnerships that promote the economic development and welfare of Partner Countries, and to address the problems of poor people around the world – is being delivered, and whether it is being delivered in a way that represents value for money. The evaluation had the following objectives:

- to act as an evidence base for the delivery and impact of the Fund;
- to enable BEIS, the DPs and In-Country Teams (ICTs) to learn about successful approaches and to help identify successful outcomes from effective collaboration;
- to ensure there is evidence to demonstrate whether the Fund has represented value for money in achieving its objectives;
- and, to inform future decisions on the design and implementation of research capacity building programmes.

3.1.2. Scope

The overall scope of the evaluation is *to determine the extent to which the Newton Fund has, or will, contribute to actual or potential increases in economic development and welfare, and reductions in poverty in Partner Countries or through addressing the problems of poor people around the world*'.

The scope of the evaluation also covers secondary benefits for the UK arising from the Fund's activity; the current research and innovation landscape in participating countries; the quality of funded research and innovation activities; impacts at a country-specific level, including comparative impacts across countries or regions where possible; and, aspects of the delivery

[55] Mid-Term Evaluation of Newton Fund (2018). Available at: Resources | Newton Fund and GCRF (newton-gcrf.org)
[56] Coffey Newton Fund Process Evaluation Report (2018). Available at: BEIS Newton Fund Process Evaluation report for publication on NF site.pdf.
[57] Tetra Tech (2019) Final Evaluation Strategy – Internal document.
[58] The Technical Advisory Group was established in July 2020 and has a cross-fund (Newton and GCRF) function.

process itself – whether processes were fit for purpose and the elements of the Newton Fund that worked well.

The final evaluation focuses on Fund-level results, excluding individual performance reviews of DPs or Award Holders. The scope has evolved (in consultation with BEIS) throughout its six-year cycle:

- Following **Phase 2** (March 2016) four core workstreams were agreed[59] - an award holder online survey; an award holder telephone; a monitoring review to identify gaps in Fund monitoring systems; and, eight Partner Country case studies.[60]
- The MTE (**Phase 3** April 2017 - July 2018) was completed based on the above design elements. It faced serious delivery challenges owing to both the lack of availability and accessibility of data. It was advised that the Evaluation Strategy be re-designed prior to the final evaluation to consider the disconnect between the evaluation scope, timeline and the Fund evolution; and to act on the findings of the MTE and the ICAI Performance Review (2019).[61]
- **The Final Evaluation** (Phase 4 December 2019 – June 2021) involved a re-design of the Evaluation Strategy which was approved by BEIS in December 2019. The strategy detailed an expanded scope which aimed to bolster the evidence base in light of the data limitations, learning and recommendations from the MTE and ICAI's Performance Review (2019). The re-defined scope included a review of approaches to gender equality[62]; data harvesting with UK DPs; a VFM assessment; a participatory re-design of the Fund ToC; eleven Partner Country case studies[63]; a Review of Research Quality; an In-Country Partner Consultation and, a UK Benefits Study. The data collection modules are summarised below and detailed in Annex 2.

3.2. Methodology

The Newton Fund involves a variety of different types of activities. Some are designed to have a **relatively direct effect** on target groups (e.g scientists and businesses) in specific countries while other activities are designed to have a less direct but more pervasive and widespread effect (e.g. embedding an innovative culture in institutions and governments). The **challenge of attribution** is compounded in this case because the Newton Fund will implement overlapping projects under different pillars, with multiple goals that are intended to reinforce one another. With no viable counterfactual options considered feasible and adding value, it was agreed that additional emphasis would be placed on gathering Award Holders' own assessments of additionality. The evaluation design brings together the analysis and findings

[59] The decision to include these modules was taken by the (then) Newton Fund Board following an assessment of the evaluation inception report which several options based on resourcing assumptions.
[60] The decision to focus on eight countries (versus all countries) was considered to provide a breadth of coverage across partner countries while managing the overall cost of the evaluation. Case study countries included Brazil, China, Egypt, India, Mexico, the Philippines, South Africa, and Turkey (later replaced by Malaysia).
[61] ICAI (2019) The Newton Fund: Performance Review.
[62] The review scope included the GCRF – as the funds share many of the same DPs and the GCRF evaluation supplier had not been contracted at the time (Jan – Mar 2020).
[63] Expanded to ensure sufficient coverage of the new countries added following the 2015 Spending Review – Peru, Jordan and Kenya.

from different quantitative and qualitative, primary and secondary data sources, using **case-based portfolio evaluation**[64] as part of a **theory-based approach.**

Box 4: What is a theory-based evaluation approach?

A theory-based approach allows the exploration of the underlying theories behind the Fund. Theory-based evaluations have two components: conceptual and empirical.[65] They seek to explain the theory behind the programme and explore how programmes cause intended or observed outcomes. The value of such an approach is in generating knowledge – not only knowing that a programme is effective (i.e. that a causal relationship exists between A and B) but also explaining the underlying causal mechanisms (i.e. how and why A causes B). We therefore focus on testing the underlying theories and the likelihood that the Fund has caused the intended results.

The Newton Fund **Theory of Change** (ToC) is the cornerstone of the theory-based evaluation. It maps the expected causal chain of events and assumptions underpinning the Fund, providing a framework to assess progress and achievements with respect to planned results and how these were intended to be achieved. Section 4 presents a detailed ToC narrative explaining the different stages of logic from activities, outputs, outcomes to impact and re-design process.

The evaluation addresses **six key Evaluation Questions (EQs)**[66] in Figure 3 below.

Figure 3: Key EQs mapped against the relevant OECD-DAC criteria[67]

3.2.1. Evaluation components

The final evaluation had four main components, summarised below. Further detail, along with the limitations and lessons for future evaluations are summarised in Annex 2.

[64] Case-based evaluation involves the 'systematic generation and analysis of cases' - where cases are framed at different levels of analysis project, programme, country or Fund. See Annex 2 for further detail.
[65] Rogers et al. (2000).
[66] A series of sub-EQs and an evaluation framework, describing the information requirements to test the theory, and how this information was to be gathered, was documented in the Final Evaluation Strategy (December 2019).
[67] The OECD-Development Assistance Committee defines six evaluation criteria which provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, programme, project or activity). They also serve as the basis upon which evaluative judgements are made. Further information is available at: Evaluation Criteria - OECD

Component 1: Engagement, management and communication consisting of the re-design of the Evaluation Strategy, ongoing management and progress reporting; the development of an Engagement, Learning and Dissemination Strategy; a secondary-data harvesting exercise and extensive engagement with stakeholders including with DPs, ICTs, BEIS and the GCRF evaluation supplier.[68]

Component 2: Partner Country end line assessments reporting on the evolution of 11 key science and innovation metrics in each active Partner Country during 2014-19 (collected in 2015 and 2020 respectively). They outline observed trends rather than the Fund's contribution to these changes. Metrics include:

- indicators of **short-term potential** relating to the country's science and innovation capacity and performance in the immediate term, as reflected in the degree of international collaboration, the international ranking of their publications and citation impact.
- indicators of **medium-term potential** relating to investments in the country's science and innovation capacity which are likely to influence its future performance. These include, for example, spending on R&D and international mobility of students.

All indicators are available as secondary published sources - Scopus, Scimago Journal and Rank, the UNESCO Institute for Statistics (UIS) the World Intellectual Property Organization and long-term studies such as the Global Competitiveness Index (GCI). Further data points could be added to improve the data series over time. Indicators can be used either as a time series within an individual country or as a relative measure across different countries, but they are not a measure of Fund impact. The assessments complemented the Partner Country case studies and were used to provide country-level context. They will be published as part of a package of publications separate to this report.

Component 3: Primary research modules consisting of seven case-based modules, providing mixed-method qualitative and quantitative data:

Module 1: Review of Approaches to Gender Equality which provided insights into current Fund-level approaches by exploring BEIS' internal Fund level processes and those adopted by UK DPs. It also explored approaches on similar funds across HMG and internationally. The review was formative, using mixed methods which included Key Informant Interviews (KIIs) with 11 stakeholders; an online survey (conducted between 22 January and 6 March 2020); a detailed document review of over 60 sources and a validation workshop with BEIS. Our survey achieved an 85% response rate with 40 individuals contributing across the partners.[69] The review found that while BEIS is committed to improving its approach to gender equality in the administration of ODA funds, there are weaknesses at the Fund level and much of the progress made has been at the DP level in the absence of a Fund strategy. Review findings were used as evidence sources to inform our analysis and response to EQ 1, on the extent to which there are gendered differences in terms of benefits realised, and, EQ 5, relating to the extent to which there is demonstrable sustainable impact on gender equality in Partner

[68] The GCRF evaluation supplier Itad Ltd. was contracted and began work in April 2020.
[69] The review included the GCRF within scope – upon request from BEIS. There are 20 Delivery Partners in total across both Funds.

Countries. The review was published in August 2020, as part of a package of publications separate to this report.[70]

Module 2: Award Holder Online Survey and follow-up Telephone Survey which were undertaken at mid-term and repeated in the final year of the evaluation. The sample frame was built using contact details from DPs and ICTs, who helped promote and disseminate the surveys. It gathered feedback on Award Holders' experiences of the Newton Fund through their projects. It focused on the aspects of relevance, effectiveness, sustainability, and, where possible, impact. The 2020 survey included questions on the effects of Covid-19. The 2017 survey achieved 862 responses from Award Holders, and the 2020 survey achieved 1,516 responses. The 2020 **telephone survey** provided a richer account of Award Holders' experiences in specific areas. These included expected impact, sustainability, effectiveness, and potential UK benefits. Both telephone samples were a sub-set of online survey respondents who agreed to be contacted again. In 2020, there were 217 completed telephone interviews – 40% of those eligible. In 2017, there were 204 completed telephone interviews – 38% of those eligible. The surveys were large-scale and repeated. They were used as a quantitative balance to the evidence gathered through qualitative case studies and KIIs. Survey findings were used as evidence sources to inform our analysis and response to all evaluation questions. The **online survey** confirmed that the Fund targeted, reached and benefitted its intended recipients and brought about additional outcomes that otherwise would not have happened. They provided evidence of the Fund's effectiveness according to the ToC, highlighted the strength of collaborations and pointed to the Fund's sustainability in specific ways. The 2020 online survey showed how COVID-19 delayed and disrupted activities but also improved flexibility of working patterns. The **telephone surveys** were used to explore certain topics in more depth, for example how Award Holders expected their work to bring about socio-economic change. A common finding in both telephone surveys was how projects were finding collaborative solutions to development challenges. The surveys also provided richer feedback on gender equality and in terms of explaining pathways to impact.

Module 3: Partner Country case studies which covered 11 active Partner Countries.[71] Each case study assessed progress on planned outputs and outcomes (according to the ToC) for three projects within each country. A total of 33 projects were sampled, with selection guided by the aim of giving maximum coverage across DPs, pillars and thematic priorities, to illustrate the widest possible range of project activities within the scope of the evaluation budget. The research took place between July 2020 and January 2021. The case studies used qualitative methods involving a desk-based review of data from the Endline Assessments (Component 2) and available project documentation received from partners; KIIs with over 250 stakeholders purposively sampled in the UK and the Partner Country and emerging findings workshops for validation. Case studies were structured to gather data and insights according to the ToC and the six evaluation questions. Findings were used as evidence sources to inform the Fund-level analyses and synthesis in response to EQs 1-6. The 11 Partner Country Case Studies will be published as part of a package of publications separate to this report.

Module 4: In-Country Partner Consultations covered the six Partner Countries not sampled in Module 3.[72] The consultations used qualitative methods involving a desk-based review of country documentation and a total of 12 KIIs, purposively sampling two in-county DPs in

[70] Tetra Tech International Development Europe: Review of Approaches to Gender Equality the Newton Fund and the Global Challenges Research Fund (2020). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908561/Review_of_Approaches_to_Gender_Equality_report.pdf

[71] China, Malaysia, Chile, Turkey, South Africa, Brazil, India, Philippines, Jordan, Peru, and Kenya.

[72] Colombia, Egypt, Indonesia, Mexico, Thailand, and Vietnam.

collaboration with the ICTs. The research took place during the period November to December 2020. The approach was participatory, providing an opportunity to reflect on partnerships by identifying strengths and weaknesses and surfacing learning to further evidence the contribution of the Fund. Consultations were structured to gather data and insights according to the ToC, specifically EQ3 and EQ5. Findings were used as evidence sources to inform the Fund level analyses and synthesis in response to EQ3 and EQ5. The consultations found that Fund partnerships are relevant and aligned with in-country partners' objectives; its broad scope has helped align priorities through shared objectives and that access to UK expertise and co-funding are main attractions for partners. Partnerships were also found to be flexible, to have created opportunities for researchers to access leading expertise and to have enhanced capacity and influence on national research and innovation ecosystems. Challenges included the alignment of systems and financial cycles and a recognition that partnerships could do more to nurture business-academia linkages.

Module 5: Review of BEIS' Value for Money Methodology took a formative approach supporting BEIS' development and piloting of a VFM rubric framework[73] for the Fund. The purpose of the pilot is to inform the development of a broader Fund-level VFM strategy.[74] The rubric-based framework was applied across a sample of 57 projects (also sampled as part of the mid-term and final evaluation Partner Country case studies) between July 2020 and March 2021. The pilot applied qualitative research methods, which included synthesising panel assessors' responses and facilitating learning workshops with BEIS. We produced two learning briefs which focused on relevance, equitable partnerships, and capacity strengthening VfM criteria at the project level. Findings informed our analyses and synthesis in response to EQ 4. Findings were also used to strengthen the rationale for the methodology and provide recommendations for the future use of the rubric.

Module 6: UK Benefits Study explored the nature, type, and extent of UK (secondary) benefits arising from the Fund to date. The study applied qualitative primary and secondary methods including a desk-based review of relevant Partner Country case study data (module 3); and an analysis of relevant data from the Award Holder online and telephone surveys (module 2); 16 KIIs with representatives from BEIS, Newton Fund Delivery Partners and academia and 6 secondary benefit case studies which involved 13 KIIs with UK-based Award Holders and collaborators. A purposive sampling approach was applied. The research took place between November 2020 and January 2021. The study found that the Fund is seen to be leveraging the strength of the UK in science and innovation to develop relationships with emerging research and innovation leaders. UK benefits were evident despite projects not being explicitly designed to produce direct benefits. These included developing academic links, high-quality academic outputs, tapping into Partner Country expertise, and in some cases, potential economic outcomes. Findings were used as evidence sources to inform the Fund level analyses and synthesis in response to EQs 3, 4 and 5. The UK Benefits Study will be published as part of a package of publications separate to this report.

Module 7: Review of Research Quality provided insights into the nature and quality of research conducted. The review took a qualitative approach, complementing Module 5 where elements of research quality were assessed through the VFM rubric. The research took place between October and December 2020. Research methods included a rapid secondary review of Fund documentation including the BEIS VFM framework, academic literature, grey literature (documents from associated bodies, conference documents), and blogs/commentaries from

[73] A rubric is a framework that sets out criteria and standards for different levels of performance and describes what performance would look like at each level.
[74] Developing a Value for Money Assessment for BEIS ODA Research and Innovation, BEIS, internal document.

relevant stakeholders which contained analysis on how research quality is achieved. We then conducted a structured review of 14 sample projects to identify 'what' research quality is and 'how' it is achieved in the Fund. The sample was derived from Partner Country case studies (Jordan, Kenya, Malaysia, Philippines, Turkey, Brazil, and Peru) and included projects with substantive research outputs. The review followed inductive and deductive searches for research quality characteristics across the sample. The review found that the Fund has delivered quality research more prominently in the areas of equitable partnerships, capacity strengthening and inter-disciplinary research. Research communication and uptake were found to be less considered in project designs. Findings were used to inform the Fund-level analyses and synthesis in response to EQs 3 and 4. The synthesis report will be published as part of a package of publications separate to this report.

Component 4: Analysis and synthesis of findings which drew together insights from the above. This included triangulation of findings across workstreams to account for potential biases relating to data collection methods, and a strength of evidence assessment (see below). Further detail is provided in Annex 2.

Box 5: Representativeness of findings

Given the limitations in available Fund level monitoring and secondary data outlined in section 3.1, the Final Evaluation findings are more qualitative in nature, with quantitative findings drawing on evidence from the Award Holder Online and Telephone Surveys.

The Online Survey achieved 1,516 responses from Newton Fund Award Holders – a response rate of 16% from those who received the survey invitation. Out of the 1,516, 556 indicated that they would be willing to take part in the telephone survey and 217 valid responses were achieved (40% of the effective sample frame). In the absence of comprehensive data on the overall population of Newton Fund Award Holders, an assessment of the representativeness of the survey cannot be made. Sample sizes for both surveys do not allow for fully representative sub-samples at the level of each pillar or Partner Country.

Partner Country case studies were selected to provide information by pillar, sector, and delivery partner. With the case study sample (33 projects) drawn from eleven countries these cannot be considered truly representative of the Fund's activities across all 18 Partner Countries. The objective of the Partner Country case studies is to achieve "coverage"; that is, to identify examples of as many types of collaboration as possible to be able to generalize the lessons learned for the Fund as a whole. Purposive sampling[75] was used for the selection of projects and respondents under the Review of Approaches to Gender Equality, the Review of Research Quality, the UK-Benefits Study, the In-Country Partner Consultation and the VFM Assessment. Thus, these modules are not fully representative of the activities funded by the Newton Fund as a whole.

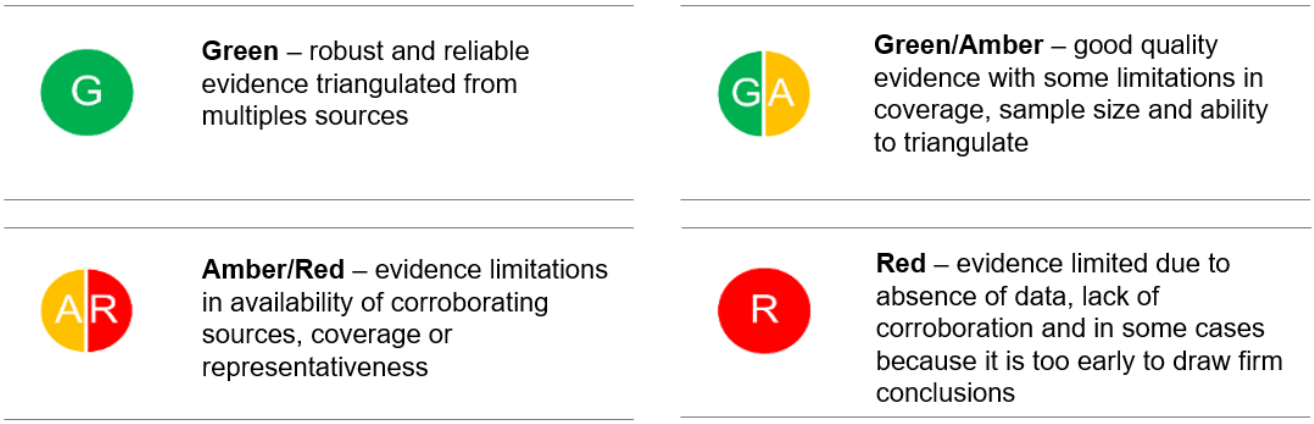
3.2.2. Judging the strength of evidence[76]

Our aim was to achieve a sufficient degree of confidence about the extent to which outcomes have occurred, Newton Fund's level of contribution to the outcomes and our theory about how and why Newton Fund contributed or failed to contribute. Confidence is affected by the extent

[75] A form of non-probability sampling in which researchers rely on their own judgment when choosing members of the population to participate in research.
[76] Annex 2 contains more details on how the strength of evidence has been assessed.

of triangulation across sources and the position, knowledge, analytical capacity, and potential biases of primary informants. Section 5 presents the evaluation findings according to the six EQs in Figure 3. Summary findings under each headline EQ have been rated using our strength of evidence 'traffic light' system (see Figure 4). [77] We adopt a qualitative approach to assessing the strength of evidence. These ratings are not designed to be a rigid framework, but rather a way to ensure evaluative judgements were made systematically across the EQs. The ratings help judge evidence supporting the conclusions reached without introducing a false sense of quantitative precision given the limitations outlined in Annex 2. Each headline EQ finding presented in Section 5 has been assessed against the 'traffic light' rating system (Figure 4 below).

Figure 4: Strength of evidence ratings



3.2.3. Methodological adaptations during Covid-19

Data collection for the Final Evaluation took place during a period of uncertainty and rapidly evolving circumstances due to the Covid-19 pandemic (March 20- January 21). The team adapted all primary research methodologies to be conducted entirely remotely. This included all Partner Country case studies; the In-Country Partner Consultation; the UK Benefits Study and the Review of Research Quality. The switch to a remote based approach was agreed with BEIS in June 2020. Recognising the limitations of conducting KIIs remotely, we conducted the early phase of the research on a pilot basis, enabling the team to revisit the risks associated and strengthen the approach. We conducted over 300 KIIs in total, drawing on our remote KII experience and best practices from other evaluations.

[77] The strength of evidence ratings takes a similar approach to the Mid-term evaluation.

4. Newton Fund Theory of Change

4.1. Background

The Newton Fund ToC is the cornerstone of the evaluation as it is the basis for our theory-based design. The ToC maps out the expected chain of events (and assumptions) underpinning the Fund, providing a framework for the assessment of progress and achievements regarding planned results and how these are intended to be achieved.

The ToC was re-designed in 2020 following a series of participatory consultations with BEIS, the ICTs and DPs[78] to ensure its continued relevance as the Fund has evolved. It is a **Fund-level ToC** – **meaning that it does not represent the detail of the various partnerships, awards, or country-level strategies of the Newton Fund**. Instead, it represents the intended outcomes and impact at Fund level and defines the pathways by which the Fund intends to deliver change. The re-designed ToC considered stakeholder feedback and aimed to improve its use as a management, communication, and evaluation tool. Key changes include placing greater emphasis on the Fund-level results hierarchy and associated timeframes; improving its structure; the addition of the secondary benefits change pathway; updating the assumptions and improving the linkage to BEIS' ODA Portfolio unified Theory of Change (published in 2018).

4.2. Intervention logic

The Newton Fund was not designed with a detailed intervention logic[79], thus the evaluation has aimed to demonstrate this logic through the theory-based approach. The revised ToC reads from left to right, detailing the logic (or pathways of change) from the activities through to impact and the necessary stages in between. The theory recognises the associated levels of 'control', 'influence' and 'concern' that set the parameters for assessing the contribution of the Fund to any observed changes (some of which may also be attributable, in part, to other factors or interventions beyond the Newton Fund).

- Level of Control: The Fund, its partners and the primary interventions, relationships, and the capacities to produce interventions and outputs.
- Level of Influence: Take up by Fund stakeholders and other actors in the research and innovation space, influence on behaviours, relationships, practices, institutions.
- Level of Concern: Further take up and influence leading to socio-economic change and development impact.

The ToC is underpinned by several assumptions[80], which are categorised according to the levels of change. Figure 5 below illustrates the logic flow of the ToC. The Newton Fund is in year 7 of its current cycle (2014-21). We expect to see evidence of results at interim outcome level with evidence of progress towards long-term outcomes emerging at year 7 in the Fund

[78] A ToC Workshop with ICTs in February 2020; Remote Based ToC Review with UK Delivery Partners (May 2020); Evaluation team learning from applying and testing the ToC (May 2020); BEIS review of revised ToC (June 2020).
[79] Coffey International Development (2016)
[80] Internal and or external factors that may positively or negatively influence the sequence of events described by the narrative summary.

cycle. **Impact-level change is expected well beyond the current evaluation period (2014-21) as the Fund was designed to deliver impact in the much longer term, up to 15 years after it began.**

Figure 5: Results hierarchy

4.3. Theory of Change

Figure 6 presents the ToC with associated assumptions at year 7 (2021). A detailed narrative explaining the stages of logic from activity to impact is outlined in Annex 4. Below is a summary of the expected levels of change, based on the logic set out above. There are three pillars of activities – **People, Research and Translation** – which are inter-related. Activities are grouped under each pillar to represent the core 'categories' of support funded by the Newton Fund. The People Pillar is central to the Research and Translation Pillars, illustrating the Fund's focus on people, equitable partnerships, and collaborations. The pillars are interlinked, and synergies are illustrated between the pillars through linkages at the output level.

Activities - Outputs

Activities are interventions funded by the Newton Fund that are delivered by Delivery Partners. Outputs are direct and measurable results of activities. Activities and outputs are considered short-term and within the 'control' of the Fund. While some individual projects may begin in later years, and so be at different stages of progress towards impact at a particular time point, it is expected that output level change at a cross-portfolio level will be realised up to 5 years after the Fund cycle has begun. Thus, the Newton Fund should be able to demonstrate how it has contributed towards the achievement of each within the current Fund cycle.

Outputs – Interim Outcomes

Interim outcomes are intermediary results which are necessary to achieve the Fund's long-term outcomes. Outputs and interim outcomes are considered shorter-term and within the 'control' of the Fund. It is expected that interim outcome level change will be realised between 5-7 years after the Fund cycle has begun. Thus, the Newton Fund should be able to demonstrate how it has contributed towards the achievement of each within the current Fund cycle.

Interim – Long-term Outcomes

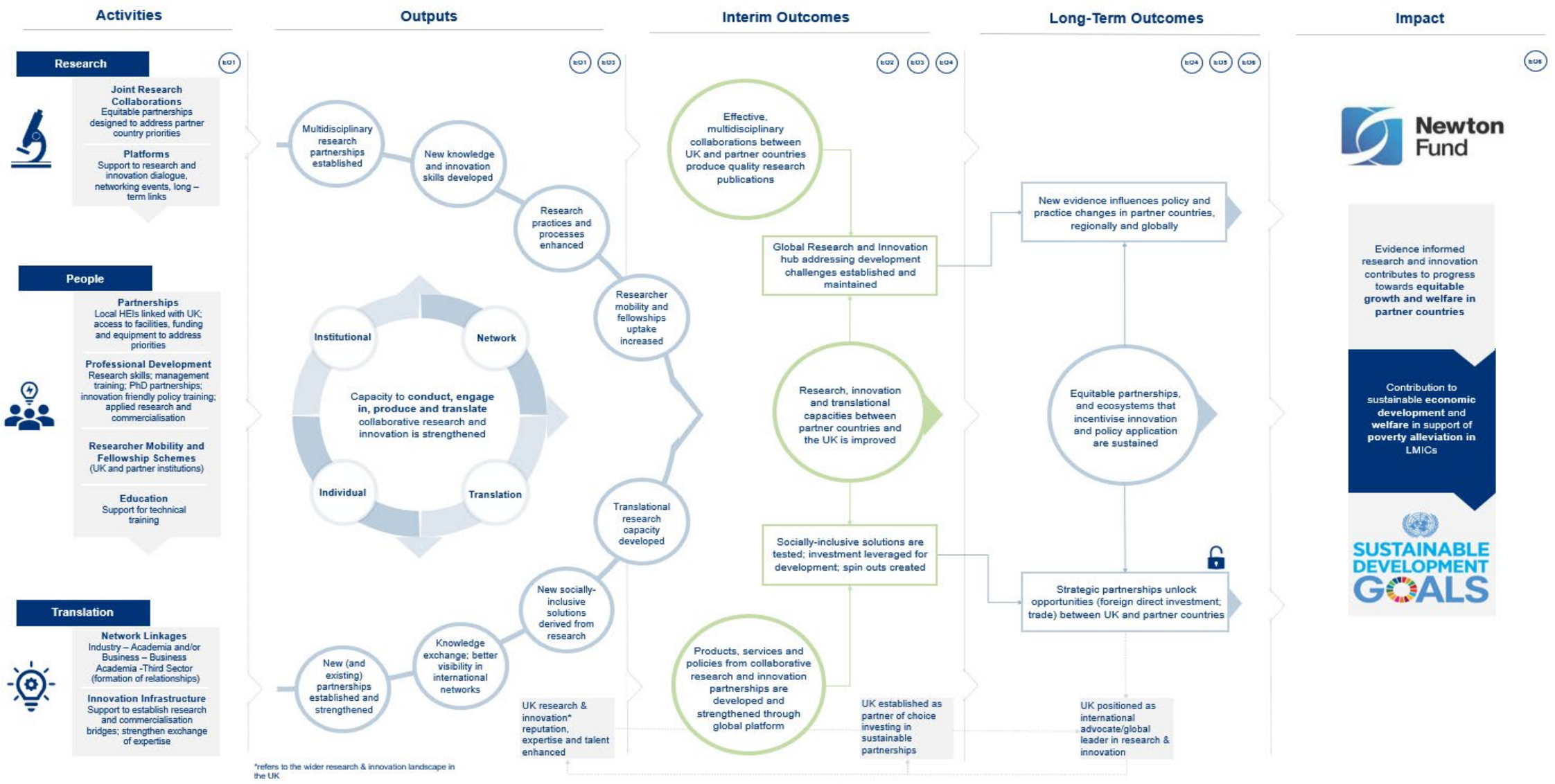
Long-term Outcomes are necessary to achieve the impacts of the Fund. They are considered within the 'influence' of the Fund. It is expected that long-term outcomes will be realised between 7-10 years after the Fund cycle begun. Thus, the Newton Fund should see signs of emerging contribution towards the end of the current Fund cycle.

Long-term Outcomes – Impact

Impact is considered much more long-term and within the 'Concern' of the Fund. Impact is expected to be realised up to 10-15 years after the Fund cycle has begun. Thus, the Newton

Fund may not be able to demonstrate what contribution it has made towards the achievement of impact until long after the current Fund cycle has ended.

Figure 6: The Newton Fund Theory of Change



Assumptions

Activity – Output (A)

1. The Fund markets itself in partner countries raising awareness of UK research and innovation expertise/opportunities that can be leveraged.
2. Partners, researchers, managers, policy and industry professionals in the UK and partner countries become aware of, and participate in, Newton Fund opportunities.
3. Partner countries are not deterred by the perception of ODA in their countries; and see the opportunity as beneficial and equitable.
4. Partner countries provide a match contribution and local leadership. Fund objectives and perceptions of success are aligned between partners.
5. UK Delivery Partners invest in the development of new knowledge, skills and research capacity and translational research capacity.
6. Awards and grants are designed in a socially inclusive way.

Output – Interim Outcomes (B)

7. UK based research institutions are the 'partner of choice'; and have the research and innovation ecosystem to support partner country research.
8. Joint research is collaborative; a common strategy is in place between partners to improve quality, relevance and sustainability.
9. HEIs in partner countries access, and benefit from the UK research and innovation ecosystem.
10. Infrastructure and investment (ecosystem) are in place to enable participants to act on improved capacity/new skills.
11. Research and knowledge outputs are internationally co-authored and of publishable quality.
12. There is sufficient uptake in translational research.
13. New knowledge and socially inclusive innovations are produced.

Interim – Long Term Outcomes (C)

14. There are pre-existing effective research dissemination and communication channels in the UK, partner countries and globally.
15. Improved research infrastructure supports innovation and evidence-based decision-making.
16. Research mobility participants return to their home country and contribute to improving research locally.
17. Intended end users can access and engage in the development of products/technologies to ensure efficiency and usability.
18. Policy, legal and regulatory environment is supportive of new innovations, research and investments/commercialisation.
19. Co-investments demonstrate complementarity and equity.
20. Changes in UK and/ or in-country delivery partners' priorities and capabilities do not impact on overall direction.
21. Fund has the capacity to engage with other programmes (GCRF and Prosperity Fund) to encourage synergies and share learning.

Long-Term Outcome - Impact (D)

22. Partnerships and capacity are built in an equitable manner.
23. UK researchers and individuals continue to interact and engage with partners overseas after the activities are completed.
24. Research ecosystem incentivizes innovation and policy application.
25. Innovative products, services and knowledge are adopted in partner countries
26. Partner countries have stronger focus on national, regional and global development priorities.
27. Commercial and institutional collaborations between the UK and partner countries are sustained.
28. HEIs, industry and university–business collaborations influence productivity gains in partner countries and the UK.
29. Global (in)security and regional (in)stability does not impact the continuity of international collaborations
30. Impact of collaborative research and innovation can be attributed to economic growth and welfare – and poverty alleviation.

Evaluation Questions

EQ1. Do the design (and objectives) of the Newton Fund address the problem stated in line with needs?
EQ2. To what extent has the Newton Fund complemented and contributed to the work of other stakeholders in the sector?
EQ3. Has the Newton Fund achieved its objectives?
EQ4. To what extent was the Newton Fund delivered efficiently?
EQ5. To what extent has the Newton Fund delivered results?
EQ6. Are the benefits that have been achieved by the Newton Fund likely to be sustained?

5. Findings

This section presents the Final Evaluation findings. Findings are structured according to the six headline evaluation questions detailed in Section 3.2 (Methodology). Each question contains one overall summary finding and, where relevant, sub-findings answering key sub-questions.

The evidence for each summary finding has been rated using our strength of evidence 'traffic light' system (see Figure 4, Section 3.2.2 and Annex 2 for more information on how the strength of evidence has been assessed). Confidence is affected by the extent of triangulation across sources and the position, knowledge, analytical capacity, and potential biases of primary informants.

5.1. EQ1 Do the design and objectives of the Newton Fund address the problem stated in line with needs? (**Relevance**)

Summary Finding
The design and objectives of the Newton Fund are addressing the needs of Partner Countries. Activities and outputs are consistent with the intended objectives of the Fund targeting economic development, welfare, or poverty issues. Whilst the lack of a Fund strategy[81], and delays to country strategies,[82] represent missed opportunities to maximise the relevance of Fund activities from the Fund's inception, and Award Holder gender disparities are evident, BEIS has taken steps to improve consistency – i.e. updating ODA guidance, improving the approach to gender equality, and publishing an operational framework.

Strength of Evidence	
GA	Main sources of evidence include the Partner Country case studies (which included a review of 33 Newton Fund projects); a review of Newton Fund operational documents; and a review of available monitoring data provided by UK Delivery Partners. There are gaps in the evidence which constrain the assessment of relevance. Sparse decision-making documentation has made it difficult to comprehensively assess key design decisions. We have therefore relied upon available data sets from DPs, which were incomplete. The absence of comprehensive Fund level monitoring data limits the extent to which it is possible to assess if the Fund has benefited its intended recipients.

[81] A Fund strategy was recommended by ICAI in their 2019 review of the Newton Fund. BEIS did not produce a strategy at that time, owing to the timing towards the end of the agreed funding period to 2021 and in advance of decisions on the future of the Fund post-2021.

[82] Country strategies for each Partner Country were produced in 2016. A planned refresh in 2019 was not completed, again owing to the timing towards the end of the agreed funding period and in advance of decisions on the future of the Fund post-2021.

5.1.1. Are the activities and outputs consistent with the intended outcomes and impacts of the Newton Fund?

Sub Finding

Activities and outputs are consistent with the Newton Fund's intention to support collaborative research, develop innovative solutions to address development challenges, and develop research and innovation systems. However, there is limited evidence of a strategic approach from BEIS and partners to identifying specific country needs, leveraging regional influence, or aligning activities and outputs with the intended outcomes and impacts, to maximise the Newton Fund's relevance.

A significant number of outputs have been produced across the Fund. Available monitoring data collated from the seven UK Delivery Partners covering six financial years (2014-20) indicates that Fund activity has resulted in 5,449 projects, 5,697 publications, 3,597 engagement activities, 3,228 collaborations and partnerships, 164 patents, and 77 spin outs.[83] It has not been possible to assess whether the quantity and quality of these outputs meets or exceeds what could be expected for the Fund as finding meaningful comparisons is not possible given the nature of the funding model and inability to determine how much funds have been allocated to which outputs due to the cross fertilisation of work across components. **Activities and outputs sampled are consistent with the expected impact pathways identified in the Newton Fund's Theory of Change across the People, Research and Translation pillars (see section 4).[84]** No Newton Fund-funded activities were identified in the course of the evaluation that did not align with the activities and intended outputs as set out in the Theory of Change. Where projects did not focus specifically on development challenges, these were instead intended to fulfil a capacity building objective (see section 5.1.3).

There is limited evidence of a strategic approach to identifying specific country needs, leveraging regional influence, and aligning activities and outputs with the intended outcomes and impacts to maximise the Newton Fund's relevance. The 2017 Process Evaluation found that while there is a shared understanding of the overall aim of the Fund among stakeholders, there is no explicit overall strategy for its implementation.[85] BEIS has since published the Newton Fund Operational Framework in August 2020[86], however, it does not include an overarching Fund strategy as recommended by ICAI in 2019. BEIS has not produced a strategy owing to the timing towards the end of the agreed funding period to 2021 and in advance of decisions on the future of the Fund post-2021. An overall Fund strategy could help to improve relevance by providing a clearer results framework across all Fund activities; aligning capacity-building activity across DPs and Partner Countries to maximise systems-level impact; and leveraging the umbrella structure of the Newton Fund to act as a platform for translating outputs and knowledge across Partner Countries.

Guidance on Partner Country priorities and capacity needs has not been available because of delays in producing refreshed country strategies which will result in missed opportunities to maximise relevance. Country strategies produced in 2016 were found to not

[83] Estimate figures from available monitoring data (FY14/15-19/20) provided by seven UK Delivery Partners.
[84] ToC pathways for individual projects are set out in annexes to the respective Country Case Study Reports.
[85] Newton Fund Process Evaluation Report (2018). Available at: BEIS Newton Fund Process Evaluation report for publication on NF site.pdf
[86] BEIS Newton Fund Operational Framework (2020). Available at: Newton Fund: operational framework - GOV.UK (www.gov.uk)

be precise enough to provide specific objectives to drive activity in priority areas.[87] The process of developing the strategies was found to be collaborative; however, it lacked systematic consultation with in-country funders or Delivery Partners, and as such the strategies were perceived to be UK-driven by over half of the ICTs. The August 2020 Operational Framework sets out a more systematic role for country partners in the development of future country strategies. BEIS' country strategy refresh was due to be completed in 2019 but has yet to be completed, owing to changes in Government priorities as a result of Spending Review and Integrated Review preparations, and due to large-scale reprioritisation efforts within BEIS as a result of the Covid-19 pandemic. Therefore, strategies have not been able to guide activity during the funding period. As discussed in EQ 5.1.3, there are some reports of activities not aligning closely with Partner Country priorities. In addition, given the Newton Fund's focus on developing research and innovation capacities, the lack of a clear needs analysis with country-specific objectives will result in missed opportunities to better target institutional and systems level capacity strengthening to country needs and maximise the relevance of Fund activities at country level.

5.1.2. To what extent has the Newton Fund targeted, reached, and benefited its intended recipients? Are there gendered differences in terms of benefits realised?

Sub Finding
The Newton Fund has targeted and reached its intended recipients (predominantly academics, PhD students and researchers, with smaller numbers of private, non-profit, and public sector recipients). Two-thirds of UK Award Holders are male, however there is no evidence available to assess the extent to which there are gendered differences in terms of benefits realised at this time.

Newton Fund activities have reached their intended recipients (predominantly academics, PhD students and researchers, with smaller numbers of private, non-profit, and public sector recipients) all of whom are intended recipients as actors in the research and innovation ecosystem. This was found to be the case for both stakeholders interviewed for case study research and respondents to the online and telephone surveys. Online survey respondents were predominantly drawn from the academic and research sectors: when asked about their current role, 55% of respondents said they were professors, 11.2% were associate professor or readers, 16.4% were lecturers / teachers and 6.5% were post-doctoral researchers (PhD). By contrast, fewer than 2% of respondents reported they were working as employees of a charitable organisation or at a private sector.

The lack of comprehensive outcome-level monitoring data limits the extent it is possible to assess whether the populations of Partner Countries have benefited from the Fund. The Fund has not systematically gathered evidence on what benefits are generated and for whom since its inception. No specific results, outputs, outcomes, or performance indicators were set out from the outset at the Fund-level. Due to the devolved nature of the Fund's inception, UK DPs had responsibility for gathering data on their activities in line with their own established grant-monitoring practices. However, the extent, type and structure of this data varies, which limits the extent to which outputs and outcomes can be reviewed as an

[87] Mid-Term Evaluation of Newton Fund (2018). Available at: Resources | Newton Fund and GCRF (newton-gcrf.org)

aggregate Fund level data set.[88] For this reason, it has not been possible to comprehensively aggregate the available monitoring data from UK DPs to determine the actual benefits to date for the wider country populations targeted by the Fund (i.e. those who are intended to benefit from improved socio-economic outcomes), although as discussed in EQ3, Award Holders and academic institutions have reported benefits in relation to capacity-building and the development of relationships. BEIS is currently piloting a centralised portfolio management and KPI monitoring system – RODA – which has been designed to address the data gaps in Fund monitoring, including the KPIs detailed in the recently published Cross Fund KPIs.[89] As discussed in EQ5, whilst it is too soon to determine the full extent to which the Fund has (or will) impact socio-economic outcomes for Partner Country populations, stakeholders were able to draw links between the Fund activity and expected benefits for the population.

36% of Newton Fund UK Award Holders are female according to available data. There is no evidence available to determine if there are gender differences in terms of benefits realised at this time. Available monitoring data from UK DPs estimates that 36% of UK Award Holders are female and 64% are male.[90] By comparison, women comprised an estimated 39% of the total population of researchers working in the UK in 2012 (the most recent available figures).[91] While there is an imbalance, it reflects the composition of the UK research funding landscape as a whole. Gender disaggregated data is, however, not collected for non-UK Award Holders; data from the online survey shows that 33% of respondents identified as female and 66% identified as male.[92] There is no data to assess if there are any differing success rates (in securing funding) between various gender, ethnicity or age groups.

BEIS has improved the Newton Fund's approach to gender equality by introducing mandatory requirements and publishing a statement on Gender Equality in ODA Research and Innovation during the evaluation period. However, inconsistencies in approaches at the programme- and call-levels remain. The evaluation conducted a review of approaches to gender equality in 2020[93] which found that Fund level approaches were disparate and lacking an overall vision or strategy. The review also found that most DPs have their own gender or equality commitment, policy or strategy which addresses either broader equality considerations or is specific to gender equality. It also found that all DPs have either formal or informal expertise for dealing with gender or equality issues. However, at the programme-, call- and project-level, there were inconsistencies in implementation across the DPs. Only half of the DPs require Award Holders to report data on gender equality, and only two provide guidance on how to collect and analyse such data. The use of gender equality scoring criteria and involvement of expertise in design and selection processes also varies. A joint Newton Fund-GCRF gender equality statement was published in October 2020 setting out high-level principles of the Fund approach to gender equality. It is now mandatory for Newton Fund applicants to include a gender equality statement in their project application. These

[88] Monitoring, evaluation and learning (MEL) activity was initially concentrated at the level of Delivery Partners, Over time, BEIS has made gradual efforts to improve Fund-level MEL activity. See 'Approach and Methodology' Methods in Annex 2 for discussion of how this has affected the conduct of this evaluation.
[89] Itad, Technopolis: Development of key performance indicators for Official Development Assistance for Research and Innovation (2020). Available at: https://www.newton-gcrf.org/wp-content/uploads/2020/10/Development-of-KPIs-Newton-Fund-and-GCRF.pdf
[90] Estimate figures from available monitoring data (FY 14/15-19/20) provided by five UK Delivery Partners.
[91] EC Research and Innovation (2021). Available at: https://ec.europa.eu/info/research-and-innovation_en
[92] 1% declined to response; 1 respondent indicated they were nonbinary. Tetra Tech International Development Online Survey - *Please select your gender.*
[93] Tetra Tech International Development Europe, Review of Approaches to Gender Equality the Newton Fund and the Global Challenges Research Fund (2020). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908561/Review_of_Approaches_to_Gender_Equality_report.pdf

efforts are supported by the revision of grant letter terms to include reference to gender equality; and the mainstreaming of equality and diversity into the cross-Fund KPIs (no data has been collected against these KPIs to date).

5.1.3. To what extent have the funded activities targeted economic development, welfare, and poverty issues in Partner Countries?

Sub Finding

Newton Fund activities are targeting economic development, welfare, or poverty issues through a variety of approaches in Partner Countries. In-country partners were involved in setting priorities and selection processes, which has helped ensure activities are relevant to country priorities, however, there are some instances where alignment could be improved.

Activities sampled in the Partner Country case studies were found to target economic development, welfare, or poverty issues through a variety of approaches. However, some People Pillar collaborations do not directly address development challenges[94]. All Partner Country case study respondents could articulate logical pathways between the project activities and expected positive socio-economic outcomes for the Partner Countries. Some projects sampled directly tackle specific socio-economic issues relevant to low-income groups, for example, by conducting research on specific health conditions relevant to the Partner Country (see **spotlight 1**, Peru and Turkey). Others have a more indirect link between activities and poverty alleviation or assume that broader economic development will result in poverty reduction through job creation or commercial development (see **spotlight 1**, Chile).

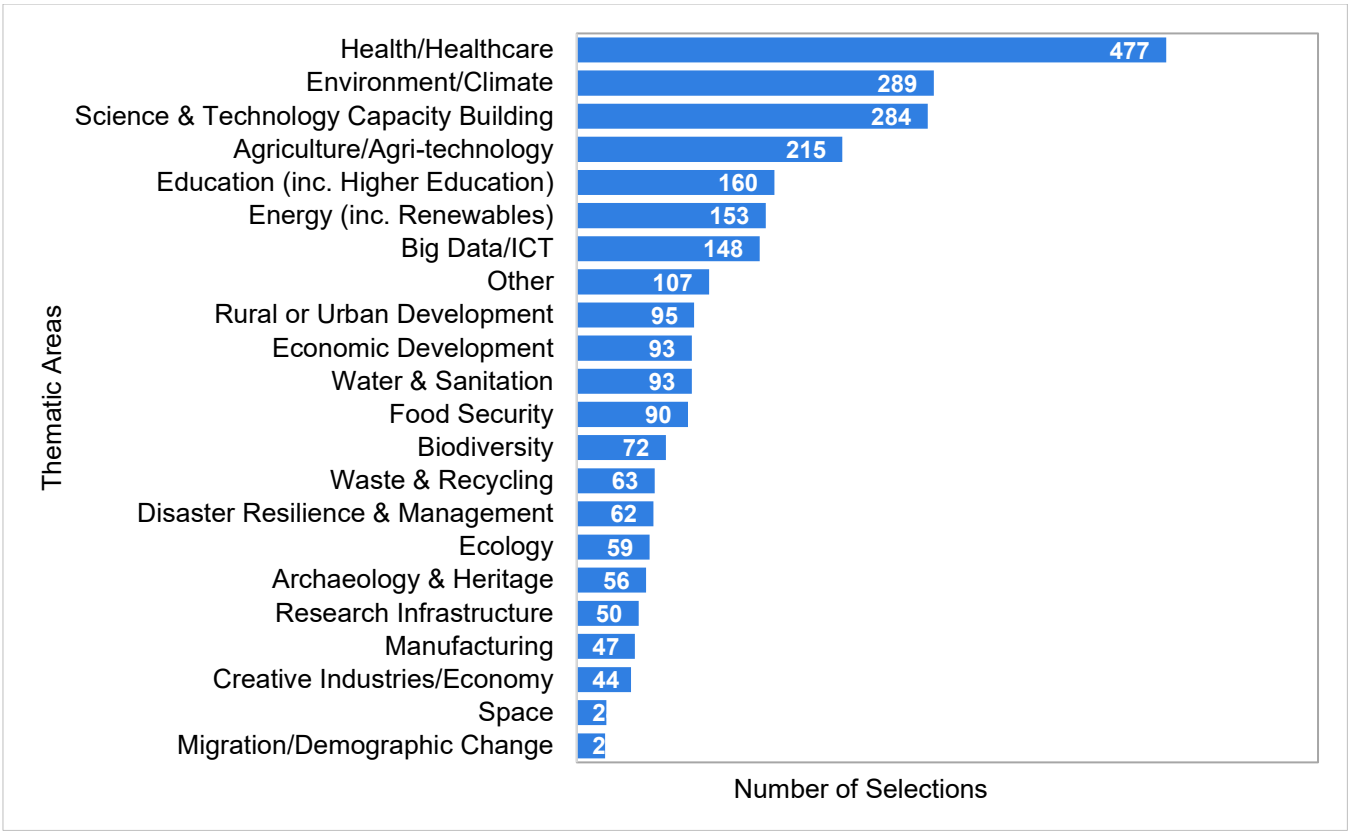
Spotlight 1: How projects expect to impact on sustainable economic development, welfare or poverty issues

Chile	Turkey	Peru
Project Hephaestus: Sustainable Economic Development of Medium Sized Mineral Extraction Companies in Chile (2016) Innovate UK; Chilean Economic Development Agency	**Interdisciplinary Research Links for Medical AI: Management of Musculoskeletal Injury (2018-20)** British Council; Turkish Scientific and Technological Research Council	**New strategies to reduce anaemia and risk of overweight and obesity through complementary feeding of infants and young children in Peru (2019-22)** MRC; Peruvian National Council for Science, Technology and Innovation
This project explored how satellite technology can be used to improve the social, economic and environmental impacts of mining operations in Chile by creating a piloting software application that allows virtual investigation of different aspects of the operations of mining and its supply chain operations activities. This aimed to support broader economic development, in addition to enabling use of the software by small and medium-sized mining enterprises.	This project sought to apply an artificial intelligence (AI)-based decision support tool to the treatment of musculoskeletal (MSK) conditions, with the aim of reducing the burden on healthcare practitioners, particularly in remote areas, and thus improving overall healthcare quality.	This project sought to identify new feeding strategies to reduce anaemia and risk of obesity through complementary feeding for infants and young children, to tackle nutritional and health challenges which have a disproportionate prevalence among lower-income groups.

Online survey respondents highlighted ‘health/healthcare’ and ‘environment/climate’ as the most common themes for their Newton Fund project, while the least common topics were ‘migration / demographic change’ and ‘space’ - see Figure 7 below. Answers provided under ‘other’ include ‘peace studies/conflict resolution’, ‘law/legal studies’ and specific scientific domains (e.g. genetics and veterinary medicine).

[94] We use ‘development challenges’ here to refer to areas of activity covered by the UN Sustainable Development Goals (SDGs), as per the objective of the Newton Fund Theory of Change. See: https://sdgs.un.org/goals

Figure 7: Thematic areas of Newton Fund activities[95]



Not all People Pillar fellowship award topics are focused on addressing development challenges for the Partner Country. For example, one sampled project focused on the experience of refugees in Yorkshire, UK, while available monitoring data from one UK DP suggests that 5% of fellowship projects were categorised as focusing on topics relating to astronomy/astrophysics, elementary particle physics, theoretical physics or quantum theory, including on galaxy evolution and binary star systems.[96] Such projects are justified by BEIS on the grounds that they contribute to wider research and innovation system capacity building, however BEIS have indicated that future fellowship activity will be more directly aligned with addressing development challenges to achieve sustained impact.[97]

In-country partners typically had roles in setting priorities and selection processes, and broadly consider projects relevant to Partner Country priorities. However, some partners felt that activity alignment could be improved. Evidence from Partner Country case studies and in-country partner consultations indicated that bilateral partnerships under the Newton Fund are aligned with national priorities (see **spotlight 2**, Kenya). In addition, several Partner Country case studies detailed clear roles in the project selection process for example, joint peer review panels or full control for the Partner Country over one phase of the process which is positive. However, as noted in EQ5 (section 5.5.3), there were some reports of local country guidelines being omitted from proposal calls or additional scrutiny placed on evaluation

[95] Tetra Tech International Development Online Survey - *In which of the following thematic areas did you implement your [Newton Fund local name], funded activities? Please select all that apply.* Respondents could select more than one category.
[96] Figure derived from available monitoring data (FY 14/15-19/20) provided by one UK Delivery Partner.
[97] International Development Sub-Committee on the Work of the Independent Commission for Aid Impact - Summary - Committees - UK Parliament (2021). Available at: https://committees.parliament.uk/committee/347/international-development-subcommittee-on-the-work-of-the-independent-commission-for-aid-impact/

criteria that differed from the UK partner's standard proposal scoring system. In some instances, respondents highlighted that activities could be better aligned with domestic priorities – for example in South Africa (see **spotlight 2**[98], the August 2020 Operational Framework sets out a more systematic role for country partners in the development of country strategies[99] funding in the future.

Spotlight 2: How the Newton Fund is relevant in partner countries

Kenya	South Africa
The Newton- Utafiti Fund 2016-21	**UK-South Africa Newton Fund 2014-21**
The Newton-Utafiti Fund launched in Kenya in 2016. Measures to ensure alignment with local priorities included an early roundtable on priority-setting, and regular meetings with the main Kenyan Delivery Partners. This meant that from the start of the programme the Newton-Utafiti priorities were set in line with Kenya's 'Vision 2030' national economic development programme. In particular, the flexibility of the Fund meant that it could be 'pivoted' to align with the launch of President Kenyatta's 2017 'Big Four' agenda of manufacturing; affordable housing; affordable healthcare; and food sustainability. At the time of writing, the in-country team were involved in discussions about ensuring that new funding projects speak to these priority areas. For example, whereas 'affordable housing' was not originally included in the 2016 Newton-Utafiti priorities, the Fund partners are now discussing potential collaborations which speak to this and the UK's own priority of sustainable cities.	The UK-South Africa Newton Fund launched in 2014. Case study research found that the Fund was valued by stakeholders, and that activities respond to key focus areas identified in national science and innovation planning documents. However, some interviewees felt that the Fund could have done more to recognise and address the specific challenges and historical legacies of the country context by embedding a more explicit transitional justice strategy in the Fund's country strategy for fostering research and innovation and including principles of equity in selection processes to ensure representation of historically disadvantaged institutions and socio-economic groups. In cases where current Newton collaborations include historically marginalised institutions, this was reportedly because they fell under the umbrella of existing programmes designed by local funders to include equity criteria in selection processes and activities.

5.2. EQ2 To what extent has the Newton Fund complemented, and contributed to, the work of other stakeholders in the sector? **(Coherence)**

'Coherence' is defined by the OECD-DAC as '*the compatibility of the intervention with other interventions in a country, sector or institution*'.[100] This EQ examines the extent to which the Newton Fund has worked successfully with other stakeholders to deliver Fund activities, and the extent to which coordination has resulted in the uptake of best practice among stakeholders.

Summary Finding

The Newton Fund has complemented, and contributed to, the work of other stakeholders in the sector through its partnerships and inter-disciplinarity which has yielded results that would not be achieved through a unilateral funding model. UK and in-country Delivery Partners have successfully coordinated to deliver Fund activities, and there are signs of uptake of best practice. BEIS works in partnership with other HMG departments to achieve Fund coherence, and the

[98] Newton Fund Process Evaluation Report (2018). Available at: BEIS Newton Fund Process Evaluation report for publication on NF site.pdf
[99] BEIS Newton Fund Operational Framework (2020). Available at: Newton Fund: operational framework - GOV.UK (www.gov.uk)
[100] OECD-DAC (2019). Available at: Evaluation Criteria - OECD

Newton Fund's shared oversight and management structure promotes complementarity with GCRF. There is no evidence of added value as a result of the cross-Fund delivery model.

Strength of Evidence	
GA	Data for this section draws primarily from the Partner Country case studies and consultations with in-country partners. Reflecting the qualitative nature of the data, our findings here are based on self-reporting, which may be subject to a positive bias on the part of interviewees towards Fund activities due to their role in delivering these. We have mitigated this by analysing the frequency that a particular theme has arisen across the body of research to inform the strength of our evidence. Where possible, we have triangulated this with data collected by the online survey. Interviewees were also offered anonymity to encourage frankness.

5.2.1. How successfully has the Newton Fund worked with other organisations/ programmes to achieve results they would not have achieved otherwise?

Sub Finding

BEIS works in partnership across HMG to achieve coherence, and the Newton Fund's shared oversight structure promotes complementarity. In-Country Teams, and UK and in-country Delivery Partners have successfully delivered Fund activities, despite some challenges on administrative issues. The Fund's partnership model has yielded results that would not be achieved through a unilateral funding model, for example strengthened relationships with Partner Country institutions and higher quality research.

BEIS aims to achieve coherence across government by working in partnership with other HMG departments, including the FCDO's Research and Evidence Division, and HM Treasury.[101] However, there is limited evidence that coherence efforts have enhanced Newton Fund results to date. BEIS' governance and oversight function ensure the Newton Fund aligns with government policy, is implemented effectively to deliver intended objectives and is coherent with other HMG ODA funding.[102] The SCOR Board[103] aims to build coherence across HMG-funded development science and research. The Portfolio and Operations Management Board supports the ODA Research and Innovation Board[104] providing Fund level management oversight and cross-government coordination through the SCOR Board and the Whitehall Data Mapping and Analysis Group (D-MAG).[105] There is limited evidence that

[101] BEIS Research and Innovation: Official Development Assistance - Statement of Intent (2017). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623850/beis-research-innovation-oda-statement.pdf.
[102] For example: DFID Research, the Prosperity Fund, Fleming Fund, Ross Fund and Soft Power Fund.
[103] SCOR Board was established in 2017 to coordinate ODA flows across government by DFID; DOH; BEIS; and UKRI.
[104] Established in 2017, the Portfolio and Operational Management Board comprises of BEIS Programme Management; Country Leads; UK DFID; FCO SIN Challenge Leaders.
[105] Overseen by UK CDR, the D-MAG meets a few times a year to discuss issues with analysing the UK research ODA landscape. The group sits under the SCOR Board with director level membership across UK DFID, BEIS, Welcome Trust, Department of Health and Social Care and UKRI.

coherence efforts with other HMG funds (such as the Prosperity Fund) have enhanced Newton Fund results beyond encouraging the sharing of learning.

The Newton Fund has a distinct purpose and mechanism but shares a common oversight and management structure with the GCRF which promotes complementarity. There is no evidence of added value as a result of the cross-Fund delivery model. The Newton Fund and the GCRF share similar primary objectives. The mechanisms by which they will achieve these objectives are, however, fundamentally different. The Funds share many of the same UK DPs and are both managed and overseen by BEIS' ODA Research Management Team and Programme Management Office.[106] BEIS has introduced the cross-Fund DLG, but there is no evidence of added value as a result of the cross-Fund delivery model.

The Newton Fund partnership model has enabled stakeholders to effectively coordinate to deliver the Fund. The collaborative nature of the Fund and joint priority-setting has encouraged Partner Country buy-in by necessitating senior-level involvement among government bodies in Partner Countries and ensuring a shared vision and ownership of priorities. For example, stakeholders in Kenya emphasised the act of developing and implementing the Newton-Utafiti Fund (and the frequent contact this entailed) had benefits for Kenya-UK government engagement in the science and innovation sector. This included being able to build on these relationships to support the 2018 launch of a Joint UK-Kenya Oversight Board in Science, Research and Innovation, chaired by the Kenyan Minister for Education and the British High Commissioner, which is intended to align the portfolio of Kenyan-UK cooperation (including Newton-Utafiti and the GCRF).

UK and in-country Delivery Partners have formed successful partnerships which have led to other collaborations and initiatives outside the Newton Fund. In-country and UK partners widely cited that partnerships established through the Fund were equitable, valued, and beneficial. In-country partners cited strong relationships as a particularly important aspect of partnership implementation (see spotlight 3). Clarity on individual contact responsibility aided smooth management. Some Partner Country DPs are also working with UK DPs on activities outside of the Fund on a formal or informal basis and others have been invited to participate in funding schemes (e.g. with the Medical Research Council, British Council and various UK incubators).

Spotlight 3: Experience delivering a large fellowship programme in-country

Kenya

The Royal Academy of Engineering has been delivering the Leaders in Innovation Fellowship (LIF) programme in Kenya since 2016. As they had not worked in an established partnership within Kenya before, the programme had been beneficial in terms of building their own links and relationships within the country, meaning they would be more comfortable knowing who to approach to collaborate on future activities outside the framework of the Newton Fund. The new base within Kenya also helped UK partners them 'gain more visibility' within Sub-Saharan Africa and resulted in increased applications to their other programmes (including the Africa Prize). In addition, they had drawn on the LIF alumni network to engage with a more recent COVID-19 crisis-response project in the region: "*it was really nice to have a portfolio of alumni working in the area already, and being able to reinvest in them rather than finding new applicants; so it's really beneficial for us to be able to have an engaged network*".

In-country teams are valuable intermediaries in facilitating partnerships through their ability to provide local knowledge and build and maintain relationships between partners and projects. The in-country teams were often undertaking specific activities to adapt the Fund to the local contexts such as building relationships between UK and in-country DPs, holding relationships with Partner Country government stakeholders, and navigating sometimes complex political environments. For example, in Peru and the Philippines, ICTs acted as the face of UK science and innovation policy in the absence of Science and

Innovation Network (SIN) staff; in Colombia, they engaged state-level actors playing an important role in the research ecosystem. In India, the ICT supported DPs to work through delays and engage with local funders. Finally, in Brazil the ICT acted as a bridge between local research institutions and ministries working on climate change which helped to navigate an increasingly difficult political climate on the Climate Science for Service (CSSP) project – a climate science collaboration between the Met Office and Brazilian meteorological agencies.

Financial and/or administrative misalignment between partners has led to some coordination challenges at country and project levels. Financial alignment across years/budget periods/country rules has caused difficulties and, in some cases, led to project funding delays. Securing in-country funds was often a lengthy, inflexible process as budget timeframes varied (e.g. the Fund starting in the middle of a budget cycle where funds are allocated) and maintaining continuity on multi-annual projects was often complex. In-country partners in South East Asia highlighted that funding regulations are lengthy processes because of legal requirements which create delays in the release of funds, while partners in other countries felt that the need to commit funding within a specific UK financial year had resulted in some projects being established too quickly, before ideas had been fully formed.

Financial and/or administrative challenges were also the most frequently reported difficulties across the online survey and Partner Country case studies. 23% of online survey respondents reported they always/often felt it was difficult to access sufficient funding in time (which may relate to either the DPs or the respondent's own institution) and 23% also said they always/often found that misalignment of processes across countries presented a challenge.[107] When asked for more details regarding the biggest difficulty they experienced, the most common answer was funding being delayed (74 answers), which is because it took time to receive the funding after approval had been granted. The level of administrative processes (62 answers) was also mentioned as an issue, such as the reimbursement of expenses process.[108] Similarly,18 of 33 sampled project case studies reported administrative or financial alignment difficulties (for example, coordinating schedules in light of different country financial years or delays in disbursing funds).

Partner Countries value the matched effort requirement as a means of ensuring that partnerships are equitable. However, meeting match effort criteria continues to challenge budgeting processes in evolving contexts. Spotlight 4 provides examples of challenges encountered by Partner Countries in meeting matched funding requirements. The decision to introduce match effort (as an alternative to match funding) was positive and more aligned with Partner Country characteristics and capacities to meet requirements. However, some difficulties associated with understanding, defining, and communicating matched effort persist.

[107] Tetra Tech International Development Online Survey - *How much did each of the following make things difficult for you (or not) during your [Newton Fund local name] project?*
[108] Tetra Tech International Development Online Survey - *Please tell us more about the difficulties you faced.*

Spotlight 4: How has the matched effort requirement presented challenges for projects?

Brazil	Philippines
Climate Science for Services Partnership (CSSP) Brazil (2016 - present) UK Met Office; Brazilian National Institute for Space Research (INPE); National Institute for Amazon Research (INPA), National Centre for Monitoring and Early Warning of Natural Disasters (CEMADEN)	**Developing Rice Resources for Resilience to Climate Change and Mitigation of Carbon Emissions (2016-19)** BBSRC; Philippines Department of Agriculture – Philippine Rice Research Institute; Vietnam Ministry of Science and Technology
During the implementation of the CSSP collaboration in Brazil, economic and political changes meant that Brazilian partners sometimes found it difficult to provide sufficient match funding. These challenges were partly overcome through the switch to match effort, with partners providing time and human resources rather than a pound-for-pound match. As a result, the majority of the funding for CSSP Brazil was provided by the UK side, with the Brazilian match focusing on covering travel costs and financing a number of postdoctoral researchers across the participating institutions. This enabled the continuation of the scientific research. However, it has resulted in a larger number of UK scientists working on the programme compared to the Brazilian side of the partnership, which somewhat affected the perception of shared ownership of the project. It also had implications for institutional capacity building: partners on both sides of the collaboration described the relationship as still slightly unbalanced in that the role of the Brazilian partners is seen as providing data to be inputted into models by UK partners.	The project is multilateral with partners from the UK, the Philippines and Vietnam and aimed to identify process routes which add value in biofuel and bioenergy applications for rice straw, as well as to increase digestibility of rice straw. During the collaboration in the Philippines, a change in leadership at the Philippine Rice Research Institute (PhilRice), the local project partner, resulted in a misunderstanding of the match funding requirements within the organisation, namely that the UK would provide the entirety of the funding. Issues in securing the level of match funding originally anticipated from the Philippines Department of Agriculture meant that PhilRice was required to make up the required match from its own institutional funding. PhilRice managed to shift some funding from other activities towards this collaboration. However, this resulted in the project ending sooner than planned for the Philippines, in 2018.

5.2.2. Has the Newton Fund's coordination with other stakeholders led to the mainstreaming/ uptake of best practice?

Sub Finding

Newton Fund activities are coordinating partners, relevant stakeholders, and end users in a variety of ways. Partnership and interdisciplinary approaches are encouraging coordination between actors in the wider research and innovation ecosystem at Partner Country level. There are signs of uptake of best practice[109], however, this is limited due to the early-stage nature of many projects or the need for additional funding to produce policy-relevant outputs.

Newton Fund activities are coordinating research and innovation stakeholders in a variety of ways – for example by conducting participatory workshops to inform research co-design processes or by engaging key institutions or research bodies as implementing partners.[110] While some projects are focusing on early-stage research, a number of sampled projects involved key practice or policy stakeholders or end-users in the design and implementation of projects (see for example Peru, **spotlight 5**), although not all projects were able to secure interest from end-users (for example Turkey, **spotlight 5**). Some projects had planned for policy-relevant outputs (such as policy briefs and dissemination workshops) from the outset, or had aimed specifically to generate findings to inform a specific policy, such as a project in Chile to inform Technical and Vocational Education and Training

[109] In using 'best practice' here, we are referring to improved practice by public or private bodies on the basis of the research findings, for example changes to healthcare practice or protocols or the use of improved climate models.

[110] Tetra Tech International Development: China, Peru, Brazil, Jordan, Turkey, and Chile Partner Country Case Studies (2021)

(TVET) policy, and one project in Peru to inform infant feeding strategies.[111] Two sampled projects engaged with international partners in order to leverage platforms: a project in Kenya focusing on cancer risks of household air pollution, which was engaging with the International Agency for Research on Cancer (IARC), a World Health Organization body; and a project in Chile studying soil erosion, which was working with partners in Argentina, Brazil and Mexico, and building on the Award Holder's contacts at the International Atomic Energy Agency (IAEA) and the UN Food & Agriculture Organisation (FAO).

Spotlight 5: Examples of in-depth and limited stakeholder engagement

Peru	Turkey
New strategies to reduce anaemia and risk of overweight and obesity through complementary feeding of infants and young children in Peru (2019-22) MRC; Peruvian National Council for Science, Technology and Innovation	**Innovating the Turkish supply chain for services in humanitarian aid (2016-19)** UKRI; Scientific and Technological Research Council of Turkey
An ongoing project in Peru (2019 – 2022) aims to identify new strategies to reduce anaemia and risk of overweightness and obesity through complementary feeding for infants and young children in Peru and so provide evidence to support the review and implementation of government guidelines on infant and young children feeding. The project took a participatory approach by engaging with local communities and health services staff (as end users) to identify and co-design prototypes for interventions to ensure they are appropriate and relevant to the target groups. Coordination with others working in this space is facilitated by the research team's active involvement in multi-sectoral government partnerships in Peru. For example, two members of the research team are currently providing consulting services to the National Centre of Nutrition and Food (CENAN) of the Ministry of Health in the planned revision of feeding guidelines for children under two years old in Peru. This connection has so far facilitated the translation of research findings directly into the policy-making process. The research team is also engaging with UNICEF Peru, which has expressed its commitment to apply research findings for use in advocacy initiatives.	This project in Turkey aimed to investigate and improve the provision of electronic card distribution and education and health provision in refugee camps, using computerised models, algorithms and tools from the operational research field. Two algorithms were developed and tested. However actual services were not tested on the ground, due to low interest from and limited engagement with government agencies. While the project team has already carried out dissemination of the work through academic conferences, engagement with government and on-the-ground respondents had been limited at the time of writing. However, interest of decision-makers within Turkey (for example, government agencies involved in card distribution) had proved limited at the time of writing, and as a result there has been no uptake of research findings, with the exception of the application of the dataset by one humanitarian response project. Nonetheless, Turkish partners were planning to engage with the International Organization for Migration on supply chain assessment issues, applying the findings from this project.

There are early signs of uptake of best practice among local and national institutions as a result of Newton Fund activity. When asked to provide examples of societal impact, online survey respondents cited examples such as the use of improved climate models; the use of new infection control protocols in hospitals; and providing input to government guidelines and national plans, as well as changing behaviours by individuals at local level (for example among farmers). However, only a minority of respondents provided clear examples of use of research by authorities or institutions in practice. The majority of respondents to this question focused on the potential value of their research findings, although did not provide clear indications that these were being considered or used in practice (although some respondents indicated they were actively engaging or attempting to engage with policymakers to disseminate results). In addition, some projects indicated that dissemination of best practice is currently limited given the need for additional funding or research to produce a policy-relevant output (as further discussed in EQ 5 and 6).

Partnerships and applied/interdisciplinary approaches are also facilitating coordination between actors in the wider research and innovation system at Partner Country level, which may have additional or unexpected benefits for Partner Countries. Evidence from the in-country partner consultation suggests that partnerships have helped establish networks of actors in the research and innovation space in Partner Countries, for example linking research bodies, universities, start-ups and businesses, and industry-academia. This was echoed in several Partner Country case studies, for example as set out in **spotlight 6**. This

[111] Tetra Tech International Development: China, Peru, Kenya, Jordan, Turkey, and Chile Partner Country Case Studies (2021)

was attributed to the multidisciplinary focus of the Fund, which enabled coordination between disciplines in a way that was not always possible with or incentivised by other funding sources.

Spotlight 6: How are project partners coordinating as a result of the Newton Fund?

Philippines	Turkey	Jordan
Developing Rice Resources for Resilience to Climate Change and Mitigation of Carbon Emissions (2016-19) BBSRC; Philippines Department of Agriculture – Philippine Rice Research Institute (PhilRice); Vietnam Ministry of Science and Technology	**Interdisciplinary Research Links for Medical AI: Management of Musculoskeletal Injury (2018-20)** British Council; and the Turkish Scientific and Technological Research Council	**Learning from Multicultural Amman: Engaging Jordan's Youth (2019-21)** AHRC; and Jordan Department of Antiquities
This collaboration in the Philippines to study rice resilience was implemented in partnership with the Philippine Rice Research Institute (PhilRice) and the Philippine Carabao Centre (PCC), a specialist agency of the Department of Agriculture. For the PCC, which took part in in a specific technical testing phase, this research could not have happened without the improved rice varieties provided by PhilRice. For the moment, there is no continuing collaboration between the UK and the Philippines. However the collaboration resulted in PhilRice and the PCC strengthening their existing partnership. The two are reportedly continuing discussions and exchanging ideas about how to combine products for commercial services, for instance regarding the potential for PhilRice to produce rice that can be used by PCC for animal feeding purposes, and how PCC can produce organic fertiliser to be used by PhilRice in production.	This project aimed to develop an AI model to assist with decision making for treatment of MSK injuries. In addition to establishing links between the UK and Turkish implementing universities, it aimed to specifically improve the Turkish partner's capacity to conduct interdisciplinary research to develop novel health technologies. while researchers working in decision science and medical science had previously collaborated on an ad-hoc basis in the Turkish implementing partner institution, these relationships were not formalised prior to this project and according to consulted stakeholders, this would not have been possible under different funding opportunities. Following the project, AI scientists at the Turkish partner institution have started investigating opportunities to engage with other medical departments in the university hospital, so as to potentially apply AI solutions to other medical fields	A project in Jordan which aimed to improve youth engagement with Jordanian museums. The project was able to bring together a wide range of stakeholders from the museum and education sectors, including museum staff and schoolteachers, to participate in a focus group. In organising events with a diverse set of stakeholders in the museum sector, the project was able to, for the first time, bring together museum and heritage professionals, universities, schools and government agencies across Jordan. This developed into an informal and inclusive network of professionals, which has led to further visits and knowledge exchange. As a result of the project, museum staff are also starting to discuss how to influence the content of new Jordanian heritage legislation and the need for new, targeted, state funding in museum education, thereby creating more broad based support for changes in policy.

5.3. EQ3 Has the Newton Fund achieved its objectives (interim outcomes)? **(Effectiveness)**

Findings in EQ3 are presented according to the expected changes at interim-outcome level detailed in the Theory of Change (see section 4). Output to interim outcome level change are considered shorter-term and within the 'control' of the Fund. It is expected that interim outcome level change will be realised between 5-7 years after the Fund cycle has begun.

Summary Finding

The Newton Fund is showing promising signs of meeting some of its objectives at interim outcome stage, including developing effective, multidisciplinary research and partnerships which address key development challenges and improving translational research and innovation capacities between the UK and Partner Countries. The lack of clear strategy for capitalising on project-level activities at a system or transnational level means it has yet to show clear signs of meeting its more ambitious objectives - to strengthen the global research and innovation ecosystem or act as a global platform for sharing learning and strengthening policies.

Strength of Evidence	
GA	Evidence for this section draws primarily from in-depth qualitative case study research conducted at a country level (involving 33 separate projects) and triangulated with evidence from the online survey and monitoring data collected by Delivery Partners. A key limitation is that the significant diversity of Newton Fund projects means that the Partner Country case studies only comprise a small sample of any project type (for example, people, research, or translation projects). For this reason, it is not possible to present precise estimates of the extent of a particular trend across the Newton Fund portfolio (for example, the true extent of interdisciplinarity), although we have drawn on our qualitative data to analyse trends, and focused on the detail of specific cases in order to assess the reasons why particular outcomes are observed.

Interim Outcome 1: Effective, multidisciplinary collaborations between UK and Partner Countries produce quality research publications

Sub Finding
The Newton Fund has enabled a large number of effective, multidisciplinary collaborations to be created or strengthened, which have resulted in research publications and outputs. Award Holders consider working in collaboration to have increased the quality of their work.

The Newton Fund has enabled many new collaborations to be developed and existing academic links to be strengthened. Available monitoring data from five UK Delivery Partners shows that at least 3,228 collaborations and partnerships have been formed.[112] The Newton Fund has enabled the establishment of new partnerships between UK and Partner Country research institutions and strengthened existing academic contacts through collaboration. This was often as a result of partners having been introduced for the first time through Newton-curated networking activity or making contact in order to respond to a Newton Fund call. As discussed in EQ4, this was 'additional' in that these collaborations would not have occurred without Newton.

Award-holders in the UK and Partner Countries strongly agree that working in partnership has improved the quality of their work, developed their skills, and enabled access to resources. This included high levels of agreement among online survey respondents that working in a partnership had helped improve the quality of the project design/methods and outputs; helped the team develop new skills; allowed the work to proceed faster; and helped with dissemination of project results.[113] In addition, there was strong agreement among telephone survey respondents that working in a partnership had provided access to complementary materials, resources or facilities; and for non-UK respondents, allowing for improved facilities to be purchased, such as software and technical equipment or

[112] Estimate figures from available monitoring data (FY 14/15-19/20) provided by five UK Delivery Partners.
[113] Tetra Tech International Development Online Survey – *What added value did working in a partnership with [UK institution(s) / country partner] bring to your project? If you feel you / your team did not experience a particular benefit, please place it in the "not applicable" box.* Respondents asked to score statements on a 0-10 basis.

access to research materials or information.[114] Benefits of partnerships cited by UK-based researchers also included being able to access specific resources and facilities they would not otherwise have access to (for example, supercomputers, virus strains and data); tap into Partner Country networks for dissemination and impact; access Partner Country expertise; and develop a greater understanding of working with researchers in the Global South, including models for equitable partnerships.[115]

Beyond the scientific value of academic publications, Newton Fund has supported the usefulness and applicability of the research outputs to solving development challenges. We reviewed research quality across 14 sampled research projects against four criteria selected through a literature review, i.e. long-term and equitable partnerships, research interdisciplinarity, capacity strengthening, and research communication and uptake.[116] Featuring these criteria enhances the prospects for the research outputs to contribute to solving development challenges. All the projects reviewed featured at least some of the criteria. The most prevalent features of research quality were equitable partnerships, which are intrinsic to the Newton Fund model, and capacity strengthening, which is also widely promoted in the Fund. To a lesser extent, but still common across the Fund, projects also featured interdisciplinarity (as discussed below). By contrast, research communication and uptake were found to be less consistently considered in project design in the sample of projects.

The interdisciplinary nature of Newton Fund research projects increased the potential impact and relevance of scientific innovation, and these methods have been common across the Fund. Award Holders were positive about the value that interdisciplinary nature of Newton projects added to the research, and some reported that they would actively seek to engage more with other disciplines in future work (see **spotlight 7** below).[117] In China, interviewees felt that engaging with the Fund had enabled the main Chinese research funding body to 'experiment' with integrated programmes, and contributed to (if not exclusively) the institution's decision to found a new interdisciplinary science team.[118] Similarly, the Research Quality Review found that interdisciplinarity was perceived to have increased the potential impact and relevance of scientific innovation as well as have contributed to solving complex science and development challenges, such as the nexus between water resource management and resilience to glacial retreat in Peru, and the food-water-energy nexus in Brazil. The review also found that efforts to promote interdisciplinarity are common, though not pervasive, in the sample projects: while nine out of the 14 sampled projects present significant evidence of interdisciplinarity, five exploited methods from only one dominant discipline and did not receive critical inputs from non-academic partners in the design stage.

[114] Tetra Tech International Development - Telephone Survey Completion Report (2021).
[115] Tetra Tech International Development: Newton Fund UK Secondary Benefits Study (2021).
[116] Tetra Tech International Development: Research Quality in the Newton Fund – A Synthesis Report. (2021)
[117] Tetra Tech International Development: China, Peru, Brazil, and Turkey Partner Country Case Studies (2021)
[118] Tetra Tech International Development: China Country Case Study (2021)

Spotlight 7: Interdisciplinary approaches to addressing development challenges

Brazil	Kenya
(Re)Connect the Nexus: Young Brazilians' experiences of and learning about food-water-energy (2016-18) ESRC; Brazilian National Council for the State Funding Agencies, São Paulo Research Foundation	**Improving food security and nutrition in Kenya: Strengthening Indigenous Leafy Vegetables research and innovation capacity (2018-19)** British Council; Kenya National Research Fund
An example of a highly interdisciplinary research is the Brazil's (Re)connect the Nexus project, where engineers from São Paulo State University (UNESP) worked with geographers from the University of Birmingham. In this case, the Brazilian partners brought a focus on technology for sustainability, energy and water quality, while the UK partners complemented this with a focus on socio-economic issues and nutrition. The Brazilian team (drawn from a university engineering department) reported that the partnership helped them understand the benefit of working with the social sciences more generally, especially in terms of how engineering can be complemented by an understanding of human behaviour. For instance, members of the research team reported that they were now interested in studying behavioural responses and likelihood of uptake of different technological innovations.	A 2018 workshop in Kenya under the Researcher Links call aimed to develop new research partnerships between UK and Kenyan researchers to develop the field of indigenous leafy vegetables in Kenya. Participants felt that involving participants from across the agricultural, genetics and supply chain fields meant the workshop was a valuable way of exploring local solutions to a specific, under-researched area. However, while some successful collaborations have been launched on the basis of connections made at the workshop, others have not progressed due to a lack of opportunity and funding for further exchanges.

Interim Outcome 2: Global Research and Innovation ecosystem addressing development challenges established and maintained

Sub Finding

The Newton Fund is successfully developing the capacity of individuals and institutions in Partner Countries and the UK to undertake research on development challenges, although at present there is little evidence of strategic activity to drive targeted, systems-level change to establish and maintain a global ecosystem to capitalise on Fund activities. However, the Fund has supported the development of academic and innovation networks between the UK and Partner Countries which will provide a basis for future collaboration.

The Newton Fund has not set out a specific strategy for developing and maintaining a global research and innovation ecosystem, although it does set out objectives for improving global capacity to address development challenges through capacity-building at individual institutional and systems level. As outlined in BEIS' ODA Statement of Intent[119], the Newton Fund aims to strengthen the research and innovation capacity of Partner Countries, such as reforming research and innovation system architecture, improving peer review and grant awarding processes. The Newton Fund Operational Framework defines three levels of capacity building: individual (researchers); institutional (e.g. universities); and systems (the wider research and innovation ecosystem), however an overarching strategy for achieving this at a global level has never been defined and there is little central guidance for UK DPs beyond the Fund strategies and theories of change to set out expectations in this area.[120]. As a result, evidence of such effects only exists at country level. In practice, the size and type of research capacity strengthening activities varies across DPs and countries.

[119] BEIS Research and Innovation: Official Development Assistance - Statement of Intent (2017). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623850/beis-research-innovation-oda-statement.pdf

[120] BEIS (2020) Internal Review of Capacity Building on the Newton Fund and the GCRF.

There is limited evidence of a strategic approach to capacity-building at an institutional or systems level, although Newton Fund partnerships have enhanced capacity among Partner Country DPs. No specific guidance on capacity-building goals or activities at an institutional or systems level, or specific country capacity gaps, were set out in 2016 country strategies or the operational framework (although more detailed objectives will be set out in the strategies under development to inform the next phase of Newton Fund activity).[121] Nonetheless, sampled in-country partners reported enhanced capacity and in some cases, influence on national research and innovation ecosystems through formal and informal learning as a result of working closely with UK Delivery Partners, such as improving technical capacity to evaluate research proposals and strengthening management and portfolio structures to more effectively manage calls and international partnerships.[122] However, data has not been systematically collected by Delivery Partners against capacity-building objectives, and so the extent and significance of capacity-building benefits at institutional or systems level is unknown.[123]

The Newton Fund is successfully building the capacity of individuals to advance research and innovation in Partner Countries and in the UK, although some People Pillar collaborations do not directly address development challenges. A majority of sampled projects, even those which did not aim to specifically focus on capacity building, resulted in some kind of built capacity, including developing professional links and networks, improving their professional profile, and building technical skills. Similarly, online survey respondents and in-country stakeholders indicated that they had received benefits from collaborating with their partners, including that working with UK partners had opened new opportunities; that the impact on the team had been positive; that they were able to develop new relationships; the collaboration had raised the quality of their work; raised their profile in their field; improved their chance of securing future funding; and improved their skills (with >85% of non-UK online survey respondents agreeing for these statements).[124] Respondents who identified as early career researchers indicated stronger agreement on these points than the wider research base. However, not all collaborations focus specifically on development topics: for example, award data from one Delivery Partner includes collaborations on pure mathematics in Brazil, Turkey, South Africa, Mexico and China; and various projects in the astrophysics field on topics such as galaxy formation and dark matter (with China, Brazil, India, Turkey, Mexico and South Africa). For this reason, not all capacity building efforts are necessarily contributing to developing an ecosystem for addressing development challenges,

[121] ICAI (2019) - Available at: https://icai.independent.gov.uk/review/newton-fund/review/ ;and BEIS (2020) Internal Review of Capacity Building on the Newton Fund and the GCRF. BEIS' review is understood to have acknowledged the need for a greater focus on institutional and systems-level capacity strengthening activities and made recommendations to do so.

[122] Formal mechanisms included the UKRI's Staff Exchange programme for research funder staff; the British Council Professional Development and Engagement Programme (PDE), which provides grants for collaborative capacity-strengthening activities in the higher education sector; and the Global Innovation Policy Accelerator, delivered by Innovate UK, which works with innovation policy stakeholders in partner countries to develop domestic innovation ecosystems. The latter has included the production of country-level reports on gaps and capacity-building opportunities with regard to the innovation ecosystem. In addition, the Climate Science for Service Partnership (CSSP) has involved reciprocal exchanges between the Met Office and researchers in partner countries.

[123] A cross-Fund indicator on instances of partner country institutions provided with capacity building support will be collected for future phases to measure the level of investment and effort being put into developing R&I infrastructure and resources. This will potentially be broken down into capacity through training, through infrastructure/resource development, market/regulatory development, enhanced specialist capacity) per financial year, and by country. Source: GCRF and Newton Fund draft indicators: Technical Summary – Internal document.

[124] Tetra Tech International Development Online Survey - *To what extent do you agree or disagree with the following?* Respondents asked to indicate level of agreement with given statements.

although may nonetheless have domestic benefits for the Partner Country because of wider academic capacity-building.

Spotlight 8: Approaches to capacity building at individual and institutional level

Philippines	India, Jordan, Turkey, Thailand, Colombia, South Africa
Assessment of internal timing and sleep among Filipinos: validation of Philippine variants of the Munich Chronotype Questionnaire for evaluating the circadian rhythm (2019-20) British Council; Philippines Department of Science and Technology (DOST PCHRD)	**Transforming Systems through Partnerships (TSP) (2016 - 2021)** Royal Academy of Engineering
An Assistant Professor at the University of Philippines Manila took part in a Travel Grant at the University of Surrey under the British Council Researcher Links programme, with the objective to learn new tools and methods from the University's Faculty of Chronobiology, and apply these to her own research on the Filipino chronotype (biological clock) in the context of night shift work. The AH reported gaining improved capabilities from the award, specifically in actimetry methods, which the partner institute specialises in. The AH also had access to specialist devices to measure the circadian rhythm. Importantly, the collaboration helped her establish contacts in the chronobiology field, providing access to UK networks. Although both the AH and her supervisor hoped that this collaboration would lead to further work together, this has not materialised to date due to lack of suitable funding opportunities and the limited community of practice on chronobiology in the Philippines. However she has plans to put research findings and new methods learned into practice through research in two industries in the Philippines, thanks to a pre-existing collaboration with German partners.	The RA Engineering Transforming Systems through Partnerships (TSP), formerly the Industry-Academia Partnership Programme (IAPP), aims to strengthen capacity and develop capabilities within higher education and research institutions to enhance their engineering education, research and innovation output. The scheme is implemented in six Newton Fund countries: India, Jordan, Turkey, Thailand, Colombia, and South Africa. A review of 10 end-of-project forms for this evaluation found that seven focused on some aspect of improving individual skills (for example, training on specific engineering skills or industry internships) and three targeted specific institutional needs (for example, conducting an analysis of knowledge and engineering skills in a partner country, or providing pedagogical training for faculty).

Some stakeholders reported that the focus on research excellence[125] has limited the potential Partner Country benefits or reinforced existing disadvantages among the academic base in Partner Countries. For example, in Peru it was noted that many excellent researchers may not have English language skills and so face barriers to participating in Newton Fund collaborations. In one sampled project in Chile, the strong imperative on UK academics to publish in order to contribute to their Research Assessment Exercise scores resulted in tensions with the Chilean side in determining project priorities (although these were successfully negotiated). In South Africa, concerns were raised that the focus on excellence as a selection criterion may present a barrier to the inclusion of historically disadvantaged institutions[126] and groups; in cases in which Newton Fund collaborations had included these institutions, this was reportedly because they fell under the umbrella of existing programmes designed by local funders to include equity criteria in selection processes and activities (although, conversely, stakeholders in Brazil and Kenya noted that the Newton Fund structure had enabled local partners to purposefully fund institutions and regions that are less often involved in international collaborations).

Similarly, ICAI's 2019 review of the Fund suggested that the focus of UK DPs on research excellence may limit the potential capacity building benefits of this kind of partnership by diverting resources to individuals, institutions and countries with relatively high capacity.[127] Analysis of data on Newton Fund fellowships and People Pillar awards for Turkey, Mexico and South Africa from four UK Delivery Partners (which are intended to support capacity building activity) indicated that a large number of awards are concentrated among top institutions in the

[125] Research excellence in this context refers to 'traditional' metrics of excellence, such as Research Assessment Exercise scores and a focus on the volume and journal of publications, rather than the more expansive definition of 'research quality' used in this section.

[126] Historically Disadvantaged Institutions refers to the cluster of universities that were created under the apartheid to cater for Black Africans and other non-white populations. Source: What is Historically Disadvantaged Universities, IGI Global (2021). Available at: https://www.igi-global.com/dictionary/historically-disadvantaged-universities/78835

[127] ICAI (2019) Available at: https://icai.independent.gov.uk/review/newton-fund/review/

country (by 2021 QS rankings).[128] Across the four datasets, 44% of awards in Mexico went to the top 5 ranked institutions (of which 31% were awarded to the single top-ranked institution); 41% in Turkey; and 55% in South Africa, compared to 8% of awards provided to 8 Historically Disadvantaged Institutions (HDIs). For three of the four DP datasets, more awards were given to the single top-ranked institution in South Africa than the 8 HDIs combined.[129]

There is evidence that Award Holders who were deployed to work on research relevant to the Covid-19 pandemic have been able to use their skills and networks developed through Newton Fund to aid them in their research. When asked whether and how their Newton work had contributed to their Covid-19 research, common responses were that respondents were able to draw on their professional networks in the response (14% of respondents); able to apply skills or knowledge they had developed through Newton Fund activity (13%); and the adaptation or use of technological solutions (13%). 17% of respondents indicated their Newton experience had made no contribution.[130]

The Fund has improved the skills of the UK academic base with regard to working with ODA funds and focusing on impact-driven, development-oriented research.[131] UK academic respondents to the surveys and Partner Country case studies emphasised the value of the academic links and networks developed through Newton projects and that participating in Newton projects had resulted in personal benefits for them as researchers, including new opportunities, strengthened relationships, raising the quality of their research, and improving their skills, and were positive about the potential impact for their chances of securing additional funding. Respondents also noted the wider value of gaining a greater understanding of the academic landscape in Partner Countries. In addition, evidence from the secondary benefits workstream indicates that universities more broadly had been able to develop their expertise on ODA and global challenge topics. This included both capacity in terms of the management of ODA grants, but also developing the UK research base's knowledge and expertise in impact-driven research.

The Fund has supported the development of research and innovation networks between the UK and Partner Countries which provides a basis to continue and initiate new collaborations on global development challenges. Most Award Holders and researchers sampled in the Partner Country case studies and the online and telephone surveys indicated that the Newton Fund had enabled them to develop networks and contacts in the Partner Country and beyond. 79% of UK-based and 75% of non-UK based online survey respondents reported that the funding had been 'very important' or 'important' for influencing the size of their research network in their Partner Countries, compared to 17% and 22% who felt it had been

[128] Data were compared for awards given to Turkey, Mexico, and South Africa, as the three countries to appear in all four datasets. India and China excluded due to the GDI policy shift. Brazil excluded due to difficulties in identifying specific institutions within the dataset.

[129] Seven HDIs were identified by the 2013 South African Ministerial Committee for the Review of the Funding of Universities. An eighth was identified in a 2018 news article. We have used the expanded list for this analysis. Source: Report of the Ministerial Committee for the Review of the Funding of Universities (2013) - Available at: https://www.dhet.gov.za/Financial%20and%20Physical%20Planning/Report%20of%20the%20Ministerial%20Committee%20for%20the%20Review%20of%20the%20Funding%20of%20Universities.pdf ;and PressReader.com - Your favorite newspapers and magazines (2018) Available at PressReader.com - Your favorite newspapers and magazines.

[130] Tetra Tech International Development Online Survey - *Please specify if and how the work supported on [Newton Fund local name] contributed to providing you with relevant skills or knowledge for you research on the Covid-19 response and what these were.* Respondents asked to indicate level of agreement with given statements. Sample of 221 respondents comprising 392 responses (some responses coded against multiple categories).

[131] Tetra Tech International Development: Newton Fund UK Secondary Benefits Study (2021).

'moderately', 'slightly' or 'unimportant' respectively.[132] This included both relationships with the collaborating institution, and contacts in the country beyond the immediate project team (for example, through dissemination activity or hosting project workshops). As discussed in EQ6, there was strong interest among Award Holders to capitalise on these networks for future collaborations and some follow-on collaborations are already under way.

Interim Outcome 3: Research, innovation and translational capacities between Partner Countries and the UK has improved

Sub Finding
The Newton Fund has established and/or strengthened translational capacities between research institutions and government departments in the UK and Partner Countries by increasing familiarity with reciprocal ways of working, developing academic and innovation networks, and providing a basis for formal agreements between the UK and Partner Countries to govern future collaboration activity.

The Newton Fund has established and/or strengthened translational capacities between UK and Partner Country DPs and government departments by increasing familiarity with reciprocal ways of working.[133] This was attributed by stakeholders to enabling frequent contact and joint working between relevant individuals at both sides of the collaboration; enabling direct access and introductions to key R&I stakeholders in the Partner Countries, rather than relying on interlocutors; and being able to 'back up' discussions about R&I collaboration with resources to implement them. This has resulted in a number of additional collaborative activities and outcomes, for example by providing a basis for new joint science and research strategies in China and Kenya; Department for International Trade (DIT) colleagues building on Newton activity in Jordan; and new partnerships between DPs outside the framework of Newton activity, which will provide additional platforms for collaboration and translation in the future.

Interim Outcome 4: Socially inclusive solutions are tested; investment leveraged for development; spin outs created

Sub Finding
Newton Fund activities are building capacity to commercialise innovations and developing solutions to address socio-economic challenges in Partner Countries. Some patents and spinouts have been formed, which suggests activities have leveraged investment – although the extent of this is unknown. Fund support is important for early-stage innovation projects; however, the early-stage or time-limited nature of some projects means that progressing to commercialisation is contingent on securing further funding.

Newton Fund activities are building partners' capacity to commercialise innovations and developing solutions to address socio-economic challenges in Partner Countries.

[132] Tetra Tech International Development Online Survey - *How much has the [Newton Fund local nam[] funding influenced the size of your [UK/Partner Country] research network (by this we mean the number of researchers in the [UK/Partner Country] whom you now know)?* Respondents asked to indicate level of agreement with given statements.

[133] We are using 'translational' here to refer to the ease of translating research practices, processes and findings across contexts, and thus create effective collaborations.

The online survey revealed that 84% non-UK Award Holders from industry and technology sectors reported that their capacity to translate research into products, solutions or policies had improved; 83% had been able to establish new institutional and commercial links; 89% reported their profile was raised in the field of applied research and product development; and 76% indicated their capacity to commercialise innovative products or solutions had improved.[134] Telephone Survey respondents further expanded on the skills developed which included accessing potential industry partners through networking sessions and improved confidence in the research or innovation as a result of Newton Fund support. This was cited as an important factor in attracting potential investors.[135] Projects sampled in the Partner Country case studies that were designed to develop specific solutions (see **spotlight 9** below) are demonstrating how the Fund is supporting the development of solutions that address socio-economic challenges. They also demonstrate how activities have strengthened partners' capacity to commercialise solutions – through engagement activities with the solar technology industry that have shared industry insights and best practice in the example of India and by collaborating to install cooling data servers in the Malaysian example, and in Kenya, the use of existing research from a previous award in South Africa to develop a low-cost device for improving the diagnosis of maternal infections which is now at clinical trial phase.

Spotlight 9: How Newton Fund projects are developing solutions to address socio-economic challenges

India	Malaysia	South Africa / Kenya
Joint UK-India Clean Energy Centre (JUICE) (2019 – 2021) EPSRC; Indian Department of Science and Technology	**Next Generation Green Data Centres for Environmental and Business Sustainability (2016 – 2019)** Innovate UK, Malaysian Industry-Government Group for High Technology	**Low-cost technologies and microbial assessment for safe drinking water in South Africa (2015 – 2017)** British Council; South African Technology Innovation Agency (TIA)
The Joint UK-India Clean Energy Centre Project brings together energy researchers and industrial partners from UK and India to share experience and develop technologies that are considered critical to the future of decarbonising energy systems. For example, the team have developed systems to support microgrid integration to the main grid in India and have successfully led the demonstration of 3 hybrid microgrids that are at field trial stage in locations across India. These technologies are operating at pre-commercial scale with industry to be involved in the next phase of installation and production. For the remainder of the project, there are plans to leverage industry investment and co-develop new business models as developments reach higher technological readiness levels.	The Next Generation Green Data Centres for Environmental and Business Sustainability collaboration in Malaysia aimed to achieve lower CO2 emissions from data centres by integrating the Malaysian Green Data Center (GDC)'s Submersify liquid cooling technology and the UK's Dearman Engine zero-emission cooling and power generation technology. The collaboration resulted in tangible benefits in the form of installing cooling data servers in the largest Malaysian 'data farm'. The UK commercial partner has currently placed the project on hold, focusing on the UK domestic market, although the IP separation meant that the Malaysian partners were able to continue development of their own technologies, resulting in a spin-off product.	A project in South Africa sought to develop a low-cost and instrument-free mechanism to evaluate water quality levels and detect bacteria. The project had reached testing phase by the time of its completion. However, the time-limited project lifespan meant that they were unable to progress further towards potential commercialisation of the device. A restructuring at the South African partner institution also meant that the research group was disbanded and were unable to apply for further funding as planned. The UK Award Holder however built on findings from this project for a subsequent Newton Fund collaboration in Kenya to develop a low-cost device to improve diagnosis of maternal infections. This won the Newton Prize in 2020 and is now at clinical trial phase.

Available monitoring data from UK Delivery Partners indicates that Fund activity has resulted in the formation of 164 patents[136] and 77 spin outs.[137] The data covers six financial years (2014-20), however this patent related data was only gathered by four UK Delivery Partners, while data on spin outs was only collected by three DPs. The number of patents and spin outs created suggests additional funding may have been leveraged, although

[134] Note only a small number of respondents (e.g. business representatives) were directed to these questions (n=63).
[135] Tetra Tech International Development - Telephone Survey Completion Report (2021): Of 15 respondents, overall positive responses: indicated able to establish institutional and commercial links; improve capacity to commercialise products or solutions; translate research into products, solutions, or policies.
[136] Estimate figure from available monitoring data (FY 14/15-19/20) provided by four UK Delivery Partners.
[137] Estimate figure from available monitoring data (FY 14/15-19/20) provided by three Delivery Partners.
164 patents recorded: 8 Academy of Medical Sciences; 11 UKRI; 54 Royal Society; 91 Royal Academy of Engineering; no data for other DPs. 77 spin outs recorded: 69 Royal Academy of Engineering (Leaders in Innovation Fellowship [LIF] programme only), 7 UKRI, 1 Royal Society; no data for other DPs.

the extent to which is unknown as this data has not been systemically collected. For this reason, the number of patents and spin outs may also be under-reported. BEIS introduced patents and spin outs as Key Performance Indicators for the Newton Fund in 2019, data is now being collected from all UK Delivery Partners.

Spotlight 10: How Newton Fund activity is leveraging additional investment

Brazil	Multi-Country
Development of an oral, thermostable enteric fever vaccine (PRORALVAC) (2016 - 2018) Innovate UK; Consejo Nacional de Ciencia y Tecnología (CONACyT)	**Leaders in Innovation Fellowship (LIF programme)** Royal Academy of Engineering; in-country partners
A collaboration by the British firm Prokarium and the Mexican firm PROBIOMED aimed to co-develop an oral, thermostable vaccine for enteric fever (typhoid and para-typhoid). The Newton collaboration with PROBIOMED concluded in 2018, and PROBIOMED are no longer involved in the vaccine development. At the time of writing, Prokarium have been granted UK Medicines and Healthcare products Regulatory Agency (MHRA) approval to run a clinical trial with human participants; a phase 1 human study in the UK has been completed, and a phase 2 study is planned in South Asia if phase 1 results are promising. This trial has been made possible by a 2019 investment of £4.59 million as a convertible loan agreement by the Wellcome Foundation.	The LIF programme, delivered in all partner countries by the UK Royal Academy of Engineering, is a programme to support partner country entrepreneurs to commercialise research and innovations of potential socioeconomic benefit to the partner country. A 2019 follow-up survey by the delivery partner Oxentia among 139 LIF fellows from the first three cohorts (out of 520 LIF 1-3 alumni) found that 73% were still working on their innovation. 42% of alumni were generating revenue and at least 1,377 new jobs had reportedly been created among 90 LIF projects. A total of US $62.5 million additional funding secured by participating entrepreneurs across the first four programme cohorts as of April 2019 (primarily from government grant, research/university grant or private/venture capital sources). 68% of LIF 1-3 alumni said that the learning they gained through the fellowship had 'a lot' of impact on the development of their innovation and 29% said it had 'some' impact.

The Newton Fund has provided valuable funding for early-stage innovation and commercial development projects. However, the early-stage or time-limited nature of some projects means that progressing to market stage is contingent on securing further R&D funding. In terms of commercial partnerships, Newton Fund support is found to be additional in many ways. For example, UK respondents stated that the support provided: a source of funding for early-stage innovations that were at too early a stage to garner interest from commercial investors; a platform to introduce partners and establish relationships; a means of de-risking the work of UK Small and Medium Enterprises (SMEs) in emerging markets; and an 'umbrella' structure to coordinate activity across multiple partners.[138] Two projects sampled in Malaysia and the UK Benefits Study cited other enabling factors for developing solutions such as the separation of Intellectual Property (IP) to allow collaborating partners to progress their contributions separately,[139] and the ability for both partners to access the expertise, facilities, and contextual knowledge of in their respective countries. On the other hand, different projects sampled in Malaysia and Turkey highlighted that the time-limited or early-stage nature of the project meant their ability to progress the solution to a market or commercial investment stage may depend on the ability to secure further development funding. In the Malaysian example, the award holder cited self-financing the next phase of research after having failed to secure Newton Fund Impact scheme funding. In the Turkish example, the project which aimed to develop solutions to improve resource distribution in refugee camps had been unable to raise interest from government partners to test and disseminate their solutions at the time of writing. This indicates that a lack of additional funding may pose a risk to progression along the Theory of Change pathway for the development of solutions.

There is limited evidence to assess the extent to which solutions themselves are socially inclusive in practice. As discussed in EQ1.3, calls are designed to select projects which intend to produce socioeconomic benefits for the Partner Country, whether directly (for

[138] Tetra Tech International Development: Newton Fund UK Secondary Benefits Study (2021).
[139] Tetra Tech International Development: Malaysia Country Case Study (2021); and, Newton Fund UK Secondary Benefits Study (2021).

example, by developing medical devices) or indirectly through economic growth and job creation. However, the extent to which these are socially inclusive in practice – for example, whether solutions are affordable for target populations and SMEs – will depend on the way in which the solutions are launched and marketed in practice. As a result of the lack of monitoring data, the extent to which the solutions have been socially inclusive in terms of the benefits realised is unknown.

Interim Outcome 5: Products, services and policies from collaborative research and innovation partnerships are developed and strengthened through a global platform

Sub Finding

While the Fund is developing products, services and policies from collaborative research, there is little evidence of the translation of research and learning across contexts at present, and there is no specific mechanism or platform for sharing these outputs. However, the transnational nature of larger funding calls and the 'umbrella' structure of the Fund may provide a useful platform for sharing Newton Fund outputs and learning across contexts.

There is no specific mechanism or platform for sharing the products, services and policies arising from Newton Fund projects and at present there is little evidence of translation of learning, although the structure of larger calls may provide a useful platform for sharing Newton Fund outputs and learning across contexts. Of 33 case study projects sampled for this review, the majority appeared to have global applicability, either because they were context-neutral (for example, treatments for disease) or because they could be potentially adapted for similar contexts. Four Partner Country case studies had an element of cross-contextual translation by design, by involving researchers from regional neighbours in as project collaborators or beneficiaries.[140] However, only one example of active translation was identified in the case study sample (an innovator in Kenya who was preparing to roll out his Newton-Utafiti-funded app to South Africa), and two examples of Award Holders planning or undertaking a collaboration in another LMIC context by building more widely on study findings (rather than directly transferring a solution).[141]

While this may be to a large degree because many projects are still at an early stage and so not at a stage to be transferred across contexts, some stakeholders felt that Newton could be doing more to facilitate trilateral or multilateral links and share the outputs of Newton-funded research. However, the transnational nature of some funding calls, and the 'umbrella' structure of the Newton Fund may provide a useful platform for coordinating knowledge transfer across Newton Fund countries. For example, one Award Holder interviewed for the secondary benefits workstream noted the potential value of the Newton Fund as a central 'hub' for transnational learning across Joint Centres in Agricultural Nitrogen funded by the same Biotechnology and Biological Sciences Research Council (BBSRC) call, by which expertise could transfer for example from Brazil to the UK, then out from the UK to China. Joint events

[140] Tetra Tech International Development: Chile, Philippines, and South Africa Partner Country Case Studies (2021)
[141] Three other examples were identified of research being potentially applied in a high-income country context (Bahrain, the UK and Australia).

involving other projects funded by the same call are a potentially valuable way of encouraging international knowledge translation in this regard.[142]

Interim Outcome 6: UK is established as a partner of choice to invest in sustainable partnerships

Sub Finding
The Newton Fund has developed relationships between DPs and government bodies in Partner Countries and positively contributed towards making the UK a partner of choice.

The Fund has positively contributed towards making the UK a partner of choice in Partner Countries and has positively positioned the UK in the research and innovation space. A review of secondary benefits found that the UK is well-positioned to be a partner of choice, and there are positive indications it is a partner of choice in some Partner Countries.[143] UK delivery stakeholders cited that the Fund enabled the strengthening of links with government stakeholders in Partner Countries – as a result of its partnership approach. Senior-level commitment and the co-ownership of research priorities is seen as enabling buy-in, in Partner Countries. Similarly, interviewees were positive about the impact of Newton on relationships between science and research institutions. Across the board, UK Delivery Partners were very positive about the impact of the Newton Fund in building partnerships, including extending the work of some UK bodies into countries they had not previously worked in, or developing their networks in the country. The success of Newton funding in enabling these relationships was attributed by some to the stability and structured nature of the Fund, which provided a clear reason and mechanism for engaging with Partner Country counterparts, and the fact that it enabled conversations over a longer timeframe than prior 'episodic' interactions.

5.4. EQ4 To what extent was the Newton Fund delivered efficiently? **(Efficiency)**

Findings in EQ4 provide insights on the value generated by the Newton Fund and its efficiency. Such findings are based on early learning from piloting BEIS Value for Money (VFM) rubric framework; a review of the Fund's secondary and indirect benefits and an assessment of the extent to which the Fund has provided additionality[144] including matched effort contribution from Partner Countries.

VFM can be defined as 'the optimal use of resources to achieve the intended outcomes'[145] and has been traditionally assessed through quantitative techniques such as Cost Benefit Analysis and Cost Effectiveness Analysis. The nature of research and innovation for development poses several challenges to employing these methods, including the diffusion of benefits outside of the initial contexts and difficulties quantifying or placing a monetary value on the impact. BEIS has been developing (and piloting) a tailored VFM methodology since 2019 – in

[142] Tetra Tech International Development: Newton Fund UK Benefits Study (2021).
[143] Tetra Tech International Development: Newton Fund UK Benefits Study (2021)
[144] Additionality is defined as an activity would not be funded without the Newton Fund.
[145] Assessing Value for Money - National Audit Office (2021). Available at: https://www.nao.org.uk/successful-commissioning/general-principles/value-for-money/assessing-value-for-money/

the absence of any existing methodology that could be applied to the Newton Fund. The framework is based on a multi-criteria peer review process that provides VFM scores at the individual project level.

Summary Finding
Most Newton Fund activities sampled would not have taken place without the resources contributed by the Fund. The Fund is producing additionality, and indirect secondary benefits to the UK are emerging. A Fund level VFM assessment has not been possible (due to the lack of systematic Fund level data and the need to adapt BEIS' VFM rubric framework beyond the project level). However, early pilots of the rubric suggest there is good project level VFM.

Strength of Evidence	
	Evidence of additionality and UK benefits draws from the online survey and Partner Country case studies. These data have been triangulated to inform the strength of the findings. For the evaluation of UK benefits, additional interviews and case studies have been used from the UK benefits study. Data on match funding comes from Delivery Partners and is unlikely to be complete due to difficulty with estimating and valuing in-country partners in-kind contributions and efforts such as labour and use of laboratories. As for value for money assessment, the data is limited to three pilots of the BEIS-developed rubric framework conducted in 2020-21 and two learning briefs based on the first pilot results. The three pilots involved over 50 assessors (academics, research managers, and evaluators) applying the rubric to evidence from 57 projects from the Mid-Term Evaluation and Final Evaluation case studies. The methodology is still experimental and does not factor in performance on country-level and Delivery Partner-level priorities. As such, results from the pilots (i.e. value for money scores) inform early lessons of what and how value for money is generated by Newton Fund but do not amount to an assessment of the Fund as a whole.[146] Until this new methodology was developed in 2019, the Newton Fund did not have a Fund-level framework to determine and assess value for money. BEIS had devolved the responsibility to secure value for money throughout the funding lifecycle to Delivery Partners.[147] In 2019, the Fund also introduced key performance indicators (but not targets) and did not set out unit cost or value for money indicators that Delivery Partners should track and meet. Due to these evidence gaps, we generate a limited set of insights and caveat these accordingly.

5.4.1. Has the Newton Fund delivered good value for money?

Sub Finding
BEIS' VFM rubric framework is still in the pilot phases, as such, there is insufficient evidence to provide a Fund level assessment of VFM currently. However, there is some evidence of partners' match contribution and emerging UK benefits which will contribute to the overall VFM of the Fund. The piloting of BEIS' methodology has provided important lessons on the extent to which

[146] It should also be noted that the third pilot run on 24 Final Evaluation projects was conducted too late in the final evaluation to analyse scores and tease out new learning.
[147] ICAI (2019) Available at: https://icai.independent.gov.uk/review/newton-fund/review/

projects are generating VFM and how it might be improved to apply at the Fund level.

Research pillar projects and projects with relatively large budgets were the most relevant to development challenges.[148] Analysis of relevance criterion scores provided by BEIS-appointed assessors to 24 MTE projects indicates these project categories achieved better than average relevance scores. This means the research topics were relevant to development priorities, and the project designs were relatively well set-up to address these.[149] For example, the Brazil research project on Zika virus epidemiology with funding of £330k and the China project on precision agriculture for family farms with funding over £1m received the top relevance score, i.e. 'excellent', on a four-point scale.[150] Other project categories (e.g. smaller projects or Translation projects) can also address similarly relevant development priorities, however based on the project sample, on average their topics and designs received lower scores, i.e. appeared to be less relevant.

People pillar projects, and partnerships set up through small-scale projects (under £150k) were found to be the most equitable in the sample. These project categories received higher scores on the equitable partnerships' criterion of the BEIS methodology within the sample of 24 projects considered.[151] The criterion emphasises that both the UK and the Partner Countries should see the opportunity for partnerships as beneficial, be active participants in research and innovation activities, and share benefits and costs equitably. The correlation between project categories and scores suggests that baseline capabilities of research and innovation stakeholders and funding availability were important factors in setting up partnerships that can be considered equitable. Across the sample of projects, divergences between UK and partner institutions were primarily caused by administrative and institutional challenges with managing large and complex projects and securing and disbursing funding. For example, the in-country partner institutions of two British Academy Newton Advanced Fellowships in Brazil and Egypt had no dedicated resources to support their Principal Investigator (PIs) with managing the grant. This support is generally available to UK PIs from their UK institutions.[152] Further, in two Research-pillar projects, partner institutions in Brazil and India faced funding capacity constraints or delays to disbursing match funding that limited the collaboration with the UK counterparts.[153]

Research and translation pillar projects have led to capacity strengthening outcomes in line with the corresponding value for money criterion. Such projects can successfully embed capacity building activities in project designs while also improving capacity through learning by doing and knowledge exchanges between partners. Specifically, 10 out of 15 Research and Translation pillar projects in this sample have provided capacity building to

[148] The budget size brackets chosen to disaggregate scores were 'under £150k', 'between £150k-£1m', and 'over £1m', however the choice of thresholds did not influence the results.
[149] Tetra Tech International Development Europe VFM Learning Brief 1: Relevance and Equitable Partnerships. (2020). Internal Report.
[150] The emergence of Zika virus in Brazil: investigating viral features and host responses to design preventive strategies. Medical Research Council, Jan 2016 – Jan 2019; and Precision Agriculture for Family-farms in China (PAFiC). Science and Technology Facilities Council, May 2016 – April 2019.
[151] Tetra Tech International Development Europe VFM Learning Brief 1: Relevance and Equitable Partnerships. (2020). Internal Report.
[152] British Academy Newton Advanced Fellowship (Egypt). British Academy, Mar 2017 – Feb 2019. British Academy Newton Advanced Fellowship (Brazil). British Academy, Mar 2015 – Feb 2017.
[153] (Re)Connect the Nexus: Young Brazilians' experiences of and learning about food-water energy. Economic and Social Research Council, Sep 2016 – Sep 2018. Sustaining Water Resources programme: Coupled human and natural systems environment for water management under uncertainty in the Indo-Gangetic Plain. Natural Environment Research Council, Apr 2016 – Mar 2019.

researchers involved in the action. This includes for example research methods training for PhD students and early career researchers, or access to research assets like databases or laboratories for senior faculty staff. Further, even in absence of dedicated activities, researchers reported improving their research skills simply by doing new research, typically under the supervision and with the mentorship of more experienced faculty staff. Finally, collaborations between research teams in different countries enabled transfer and exchange of knowledge and working practices which enriched capacity for the partners. Overall, this means Research and Translation pillar projects generate outcomes beyond producing research and putting it to good use, which provides good value for money from these projects.[154]

Taken together, pilot scores are indicative of good VFM delivered at the project level but cannot be regarded as an assessment of Fund level VFM. BEIS has innovated with the VFM rubric in research for development, where there are no tried-and-tested methodologies. However, the rubric is still an experimental tool and has limitations, particularly it does not provide adequate guidance or methods to compare project impacts to costs. In addition, there is no consideration of how each project contributes to results at country, Delivery Partner, or Fund level. The current sample of 57 projects tested is small compared to the Fund (£52m v. £455m) and not representative of the Newton Fund as a whole. As a result, we cannot make generalisations from the three pilots or assess how different projects with different sizes and aims aggregate up to the country, Delivery Partner, or Fund levels. While results cannot be generalised, it is indicative of VFM at project level that a large proportion of the projects scored in the pilots received an overall VFM rating of 'adequate' or above.[155]

The match effort requirement has enabled the Newton Fund to leverage additional resources from Partner Countries' funding agencies. The Newton Fund requires Partner Countries to match the contributions received from the UK either in cash, resources (e.g. facilities or equipment), or efforts (e.g. labour).[156] Available monitoring data from five UK Delivery Partners estimates the Fund's match contribution from partners to be at least £136m up to December 2020.[157] Against the UK total funding of £455m, Partner Countries have therefore matched around 30% of the UK contribution. However, the match contribution value is likely to be an underestimate of the actual contribution, due to inconsistencies and gaps in the data. Several UK Delivery Partners were not able to report detailed match contribution from their counterparts. There is no common definition across the Fund of in-kind contributions, such as labour and use of facilities and equipment, nor a methodology to calculate these. As a result, in-kind contributions were difficult to value. Overall, match effort has contributed to the VFM of the Newton Fund, however the extent to which is unknown.

The Fund's benefits for the UK, for example a stronger UK research base and the generation of knowledge in addressing global challenges relevant to the UK such as climate change, are additional to the primary purpose and provide good value for money. While the Newton Fund's purpose is poverty alleviation in Partner Countries, by drawing from UK research and innovation expertise, it has also delivered benefits for the UK.

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[154] Tetra Tech International Development Europe VFM Learning Brief 2: Capacity Strengthening. (2021) Internal Report

[155] The proportion of projects scoring 'adequate' VFM or above was consistently above four in five projects across pilots: in the first pilot covering Mid-Term Evaluation case studies, the proportion was 21 out of 24 projects (87.5%); in the second pilot covering Final Evaluation case studies from 3 countries, the proportion was 6 out of 9 projects and 9 out of 9 projects respectively in two distinct panels scoring the same projects, for an average of 83.3%; in the third pilot covering Final Evaluation case studies from further 8 countries, the proportion was 23 out of 24 projects (95.8%).

[156] BEIS Newton Fund Operational Framework (2020). Available at: Newton Fund: operational framework - GOV.UK (www.gov.uk)

[157] Estimate figures from available monitoring data (FY 14/15-19/20) provided by five UK Delivery Partners.

Our study of these benefits, based on methods described in Annex 2, shows significant benefits have developed in terms of research capacity, knowledge generation, economic and commercial benefit, and relationships and reputation (see **spotlight 11** for a summary of UK benefits).[158]

Spotlight 11: What are the mutual benefits to the UK?

Research Capacity

The Newton Fund has strengthened the UK research base in new fields and enabled the development of strong academic links which are expected to lead to additional collaborations and wider institutional partnerships. The Fund has been praised by UK institutions and researchers for enabling collaborations with emerging research leaders that would not otherwise receive funding.

Knowledge Generation

As a global stakeholder, the UK benefits from knowledge generation in addressing global challenges (such as antimicrobial resistance and climate change), to which the Fund has been seen to make a strong contribution. Even where findings from Newton-funded research are not immediately applicable in the UK, wider learning from partner country expertise resulting from academic exchange has also been noted to contribute to the UK research base.

Economic Benefits

While evidence of direct economic benefits of Newton-funded research is somewhat limited, a large number of UK award holders held an expectation that there would some kind of economic returns in the future. For example, research and innovation could lead to increasing the quality or reducing the costs of products imported by the UK. In addition, firms participating in Innovate UK programmes, which have an explicit goal of encouraging economic partnerships with firms in the partner country, reported more concrete economic outcomes, such as the introducing new products to the market. Newton programmes were also seen to be providing a source of support for early-stage innovation partnerships not available from DIT or other sources.

Relationships and Reputation

The Fund has helped to develop relationships and build trust between funding organisations and delivery partners in the UK and partner countries, as well as at an intergovernmental level. In addition, while UK research and innovation already enjoyed a strong reputation prior to the Fund, there is some evidence that the Fund helped the UK establishing itself further as a research and innovation partner. Specifically, the equitable nature of partnerships, through shared ownership of priorities and match funding, encourages buy-in and is highly appreciated by stakeholders in partner countries.

5.4.2. To what extent have the funded activities provided additionality[159]?

Sub Finding

Most activities sampled have been additional – i.e. they would not have taken place without the Fund. Award Holders attributed this to a lack of alternative funding sources for collaborations with the UK, and lack of funding for research more generally. The Fund has enabled stronger collaborations, including with partners that had not previously collaborated internationally, and introduced interdisciplinary approaches to research.

The Fund has enabled Award Holders to undertake activities they would not have been able to do otherwise. A majority of respondents to the online survey reported that the funding had 'definitely' (70.8%) or 'probably' (14.9%) made it possible for them to do new research or business activities, compared to just 3.8% who said it 'definitely did not' or 'probably did not'.[160] This finding was echoed by interviewees in the case study sample, in which a majority

[158] Tetra Tech International Development: Newton Fund UK Secondary Benefits Study (2021)
[159] Additionality is defined as an activity that would not be funded without the Newton Fund.
[160] Tetra Tech International Development Online Survey - *Do you think that the funding provided by the [Newton Fund local name] made it possible for you to do new research or business activities that you could not have done otherwise?*

indicated that the projects would not have been possible, or would not been as strong, without Newton funding.

Award Holders reported that without Newton funding, partnerships with UK institutions / organisations would not have been possible or would not have been as good as the Newton partnership. Just over a fifth (22.1%) of non-UK respondents to the online survey said they would not have had any partnership with any UK institutions / organisations, and close to half (47.4%) indicated they would have had a partnership with UK institutions / organisations, but it would not have been as good as the current one.[161] A substantive minority of 13.1% said they would have the same partnership regardless of the funding and 8% felt they would have better partnerships.

The reasons cited for additionality were a lack of alternative funding sources for these kinds of collaborations; and that the Newton Fund model enabled new or stronger forms of collaboration. 35% of online survey respondents agreed that they would have pursued other channels of funding to collaborate with the UK/Partner Country if the Newton Fund had not been in place, while 19% would not have done so (with 45% unsure or neither agreeing nor disagreeing).[162] Among those who indicated they would not, the main reasons given related to a lack of funding that supports international collaboration and/or a lack of funding generally. This was echoed by respondents in the in-country consultation and Partner Country case studies, who noted that Newton Fund partnerships provide the only opportunity to access international research and innovation collaborations with the UK, as domestic initiatives tended to focus on encouraging domestic collaborations. Similarly, UK stakeholders in the secondary benefit workstream indicated that the Newton Fund provides a source of funding specifically for collaborations with middle-income countries that are otherwise not available. Other funding sources for international research or capacity building collaboration were available in some of the Newton Fund countries through for example the European Union Horizon 2020 programme.[163] Even in the context of these other initiatives, our results indicate Newton funding was additional from a UK perspective.

The Newton Fund has funded some newer, less traditional types of projects. As well as providing the necessary funding, Partner Country case study respondents indicated that the funding had enabled *specific types of project* which would not have been possible through alternative funding sources. For example, the funding enabled multidisciplinary collaborations, and collaborations in which the Partner Country plays a leading research role. In some cases, the collaboration had been established specifically to respond to the call, and so would not have been established otherwise. All the projects which indicated they may have been able to secure alternative funding sources (4 out of 33) felt that Newton funding had nonetheless had benefits, for example by enabling a more ambitious or multidisciplinary project. Similarly, in the in-country partner consultation, some partners referred to promoting the Fund's joint research opportunities in fields that are not traditionally funded – for example, heritage, culture and sustainability – which attracted interest in priority areas that are often underfunded. Newton also funded partnerships with academic institutions which did not have experience of engaging in international collaborations, for example in Brazil by involving regional funding agencies.

[161] Tetra Tech International Development Online Survey - *Which of the following statements do you agree with most? If my institution / organisation had not received the funding:* Respondents asked to which given statement they most agreed with.
[162] Tetra Tech International Development Online Survey - *To what extent do you agree or disagree with the following? If I/my team had NOT secured the [Newton Fund local name] funding, it is likely I/my team would have pursued other funding to secure a collaboration with a UK-based organisation.*
[163] Mid-Term Evaluation of Newton Fund (2018). Available at: Resources | Newton Fund and GCRF (newton-gcrf.org)

Consequently, the Newton Fund has involved a few institutions that were less likely to otherwise participate in international collaborations.

5.5. EQ5 To what extent has the Newton Fund delivered results (long-term outcomes)? **(Impact)**

Findings in EQ5 are presented according to the expected changes at long-term-outcome level detailed in the Theory of Change (see section 4). Long-term outcomes are necessary to achieve the impacts of the Fund. They are considered within the 'influence' of the Fund. It is expected that long-term outcomes will be realised between 7-10 years after the Fund cycle begun.

Summary Finding
There are signs the Newton Fund is beginning to influence its long-term outcomes - country level policy and/or practice; formation of equitable partnerships; creation of new opportunities for collaboration between the UK and Partner Countries and strengthening the reputation of UK research and innovation. However, it is too soon to determine the full extent to which the Fund has (or will) achieve socio-economic development and whether it will lead to enhanced prospects for trade and new investment opportunities.

Strength of Evidence	
	The Fund is only seven years into implementation. The Newton Fund Theory of Change expects long-term outcomes assessed in this chapter to occur between years 7-10 of the Newton Fund cycle. This evaluation has therefore not been able to assess the extent to which the Newton Fund has achieved its intended impact – as such benefits are not expected to be realized within the current Fund cycle (2014-21). However, this section draws on evidence collected across the other EQs and triangulated with further case study and online/telephone survey data to provide an assessment where possible of signs that these long-term outcomes will be achieved. Evidence for policy and practice change in countries is drawn from the online survey, which relies on self-reported impact from Award Holders and is necessarily limited in terms of contextual information. For this reason, we have focused on three specific cases identified in case study research and secondary sources, while recognising this will not reflect the entirety of policy and practice changes arising from Newton-funded activity.

Long-Term Outcome 1: New evidence influences policy and practice changes in Partner Countries, regionally and globally

Sub Finding
It is too soon to determine the Newton Fund's influence on policy or practice. However, there are signs of evidence beginning to influence country level policy or practice in some Partner Countries.

Most projects cited it was too soon to determine if new evidence or solutions were influencing policy or practice at country level or beyond.[164] Most projects reported to be at the planning stage for dissemination and uptake which is expected to lead to wider levels of influence.[165] Several 'translation' challenges were highlighted (see **spotlight 12**). Sampled respondents nevertheless provided evidence of individual or organisational level influence which are positive interim outcome level results (as evidenced in EQ3).

Spotlight 12: Challenges translating new evidence or solutions into policy or practice

Time	Funding	Context
Translating new evidence or solutions into policy or practice is a lengthy, complex process. Project designs do not always consider how new evidence or solutions might influence or translate into policy or practice. Some projects were reported to be 'too short' to have an influence. Effective translation, or influence takes time to nurture.	Where projects did not include 'translation' in their designs, 'follow-on' or 'seed' funding is required to apply new evidence or solutions in practice. Research can potentially benefit from continued funding from other sources (academic institutions) whereas product development and commercialisation need industry to fund continuous development. Most projects sampled cited a need for additional funding to apply new evidence or solutions in practice.	Contextual barriers were evident among the projects sample in three countries. These include historically low levels of collaboration between academia and government and, institutional bureaucratic barriers that hinder efforts to influence policy or practice.

There are signs that Newton Fund supported activities are influencing policy and practice in India, Chile, and China. In India, the development of a new maternal care vital signs alert device – CRADLE - has potentially influenced routine maternal healthcare practice in pilot sites in eight countries (see **spotlight 13**). In China, case study evidence suggests that Newton Fund research into slowing the spread of Antimicrobial Resistance (AMR) influenced a government decision to introduce a ban on the use of colistin[166] as a food additive in the agricultural industry. In Chile, Newton Fund research focused on the trajectories of Technical and Vocational Education and Training (TVET) graduates is considered to have informed the design of a new National Strategy for Technical and Professional Training published in 2018 (although this strategy may not have been ultimately implemented due to a change in government).

[164] Tetra Tech International Development Partner Country Case Studies (2021) - Philippines; India; Turkey; Peru; Brazil; Jordan; Kenya, Malaysia; and South Africa.
[165] Ibid 2.
[166] Colistin is an antibiotic used as a last-resort treatment used to treat serious bacterial infections (including pneumonia) in people resistant to other antibiotics.

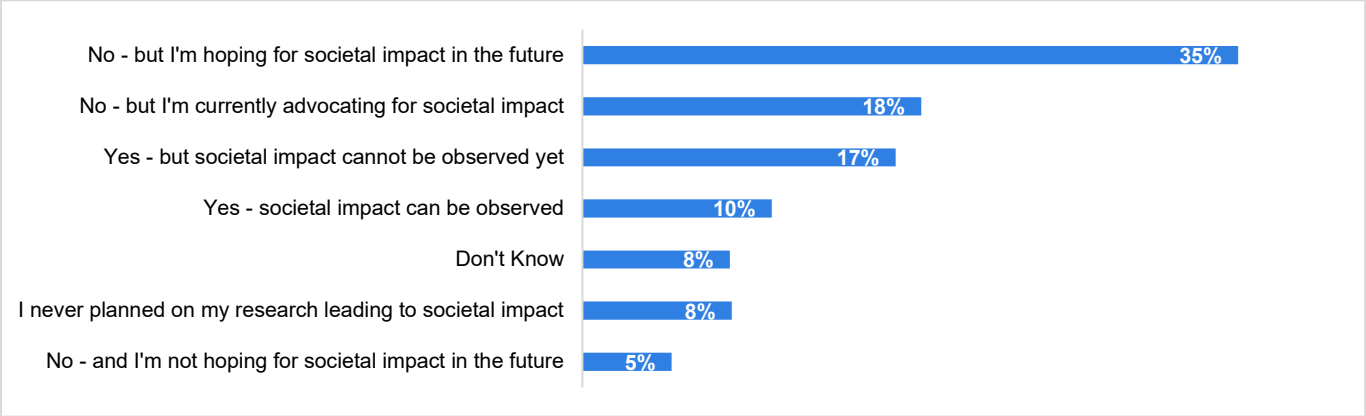
Spotlight 13: How is new evidence beginning to influence policy or practice in partner countries?

India	China	Chile
CRADLE Vital Signs Alert (VSA) MRC; and the Department for Biotechnology, India	**Slowing Antimicrobial Resistance (AMR)** MRC; ESRC; BBSRC and National Natural Science Foundation of China	**Technical & Vocational Education (TVET)** ESRC; and Comisión Nacional de Investigación Científica y Tecnológica
CRADLE aims to improve socio-economic outcomes in India (and beyond). Obstetric haemorrhage, pre-eclampsia and sepsis account for over 50% of maternal deaths worldwide. Early detection and effective management rely on vital signs monitoring, including pulse and blood pressure. CRADLE, is a device which measures blood pressure and pulse, detecting circulatory shock with an early warning system. Over 3,000 devices are now being tested in routine care in clinics across Ethiopia, Haiti, India, Malawi, Sierra Leone, Uganda, Zambia and Zimbabwe. Improvements in health- related socio-economic outcomes are dependent on the widespread adoption and use of the device but the early evidence suggests it is beginning to influence maternal care practice with results showing positive levels of prediction accuracy, which will help to prevent maternal mortality.	Slowing AMR aims to improve socio-economic health outcomes in China (and beyond) by reducing resistance to colistin in humans. AMR is a global contributor to loses in trade, livestock production and health expenditure (O'Neill, J. 2016). Colistin is used widely in agriculture as a growth-promoter leading to resistance in certain bacterial strains. The research identified a gene (mcr-1) which allows bacteria to resist the killing action of colistin. The evidence suggests the research has influenced the China's decision to ban the use of colistin in agriculture. Published evidence suggests the ban has led to a decline in colistin resistance in China, and a drop in the human carriage of the mcr-1 gene (Wang, Y. et al. 2020). The research has potentially influenced a national policy level change, which has had an impact on reducing colistin residues in animals helping to preserve the antibiotic for human treatment.	TVET research aims to improve socio-economic outcomes in Chile where 43% of TVET students are from low-income backgrounds (Sepulveda, L. et al 2016). The research has potentially influenced the inclusion of regional and local needs by suggesting the new Chilean TVET strategy includes provisions for sub-national governing structures; coherence between education and labour ministries, and central and regional government; and by suggesting the strategy recognised the complexity and diversity of post-graduate trajectories. While socio-economic impact is dependent on the implementation of the Strategy, there is an assumption the Chilean TVET system will be more effective, and more tailored to improving low-income group needs, thus positively contributing to more inclusive growth in the long term.

In addition, some further examples of possible national level policy impact were reported in the online survey, although limited further details are available on these projects. As shown in Figure 8, 10% of online survey respondents indicated that their project had resulted in an observed societal impact and 17% indicated an impact that could not yet be observed. Of these, examples included policies being adopted by local/regional authorities; technical inputs to national plans and health guidelines; and in one case, reported direct agricultural policy change (China). A large number of respondents provided more general responses about the value of the research outputs (for example, new data or research findings) without indicating these had yet led to on-the-ground change or were being actively used by policymakers. 53% of respondents indicated that impact had not yet occurred, although they were actively hoping or advocating for this in future. Conversely, 5% indicated that they were not optimistic about impact in the future, and 8% of respondents indicated that they never planned on their research resulting in social impact.

Figure 8: Perceptions of policy/societal impact of Newton funded projects[167]

[167] Tetra Tech International Development Online Survey - *Has your [Newton Fund local name]-funded project led to a policy change / societal impact at either the organisational/institutional, local, national or international level?*



Follow-on funding, timing, relationships and the profile of the Newton Fund helped 'open doors' to influence policy or practice. Three 'conditions' were found to help new evidence influence policy or practice in the examples highlighted.

1. Attracting follow-on funding from the Newton Fund and the Bill and Melinda Gates Foundation enabled CRADLE to develop the device and test it at scale in India.[168]
2. Producing timely evidence for policy processes that coincided with high-level political debates in country helped the Economic and Social Research Council (ESRC) and Comisión Nacional de Investigación Científica y Tecnológica (CONICYT) TVET project gain interest from policy makers in the results in Chile. The involvement of government affiliated bodies in the research also helped the evidence be considered in policy development.
3. Strong relationships between senior officials and researchers were important 'door openers' to access and influence policy debate in China. Relationships usually arose from a combination of local knowledge and networks (existing personal connections, or researcher prestige) aided by the profile of the Newton Fund partnership in all three countries.

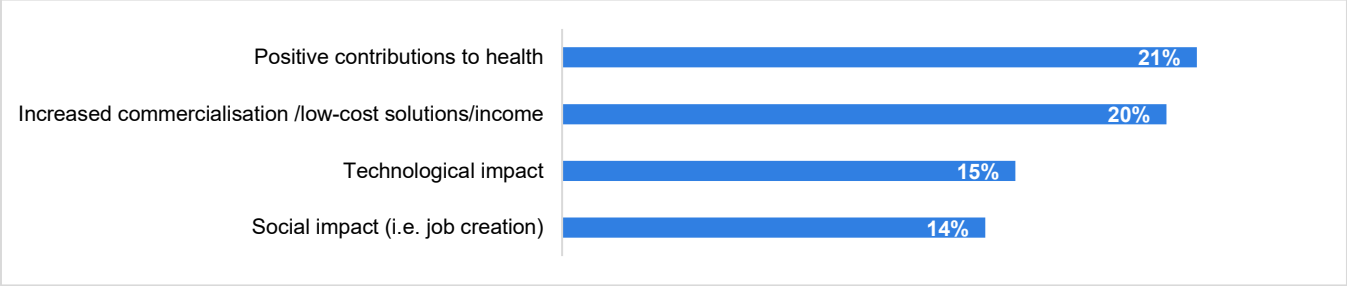
5.5.1. Is there a demonstrable link between Newton Fund activity and current or potential future poverty reducing economic development in the Partner Countries?

It is too early to assess if Newton Fund activities have contributed to current or likely future poverty reducing economic development in Partner Countries. As outlined in the Fund's ToC (Section 4), it is too soon to observe this level of impact at this time, and thus the extent or likelihood of contribution to poverty reducing economic development is unknown. However, the evidence suggests Award Holders and respondents in sampled Partner Countries perceive a link between their project activities and potential socio-economic development. The Telephone Survey asked Award Holders about the impact of their project against six impact pathways.[169] Of those who selected the economic development pathway, 'Positive contributions to health', 'increased commercialisation/production of low-cost solutions or raising income' were the most frequently cited areas of impact.[170] Of those who selected the

[168] CRADLE Projects - CRADLE Trial (2020). Available at: https://cradletrial.org/cradle-trials/
[169] Impact areas - economic development; creating a collaborative solution to development challenges; poverty reduction; environmental sustainability; gender equality; and, improved social development.
[170] 53% of projects were ongoing and 47% completed at the time of the survey.

poverty alleviation pathway, 'Financial benefits/increased incomes' and 'healthcare access' were the most cited areas of impact.[171]

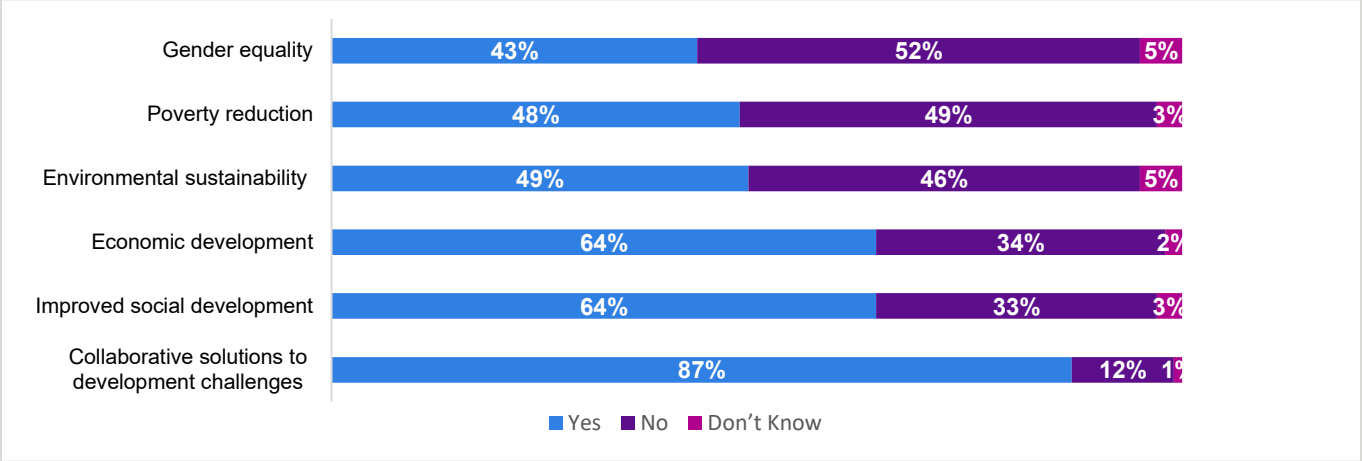
Figure 9: Impact areas cited by respondents who selected the 'economic development pathway



5.5.2 Is there any demonstrable sustainable impact on gender equality or environmental sustainability in the Partner Countries?

It is too soon to determine if the Newton Fund has had any demonstrable sustainable impact on gender equality or environmental sustainability in Partner Countries. There is no evidence from the research to demonstrate impact on gender equality or environmental sustainability in the Partner Countries at this stage in the Fund cycle. This is due to a combination of factors, principally the fact that most projects sampled cited it was too early to determine any level of impact, and the fact that the Fund had no specific objectives to achieve gender equality or environmental sustainability. Nevertheless, Telephone Survey responses indicate that more than 40% of the projects sampled may impact gender equality or environmental sustainability in the longer term. The survey asked Award Holders about the impact of their project against six impact pathways (see Figure 10).[172]

Figure 10: Expected impact pathways cited by respondents[173]



'Environmental sustainability' and 'gender equality' were among the least cited impact pathways from Telephone Survey respondents (Award Holders).[174] Respondents were more likely to say 'no' or 'don't know' regarding the expected impact of their projects on both pathways. 'Less (water, soil, air) pollution' was the most cited impact area among respondents

[171] 36% and 20% of respondents, respectively.
[172] Impact areas - economic development; creating a collaborative solution to development challenges; poverty reduction; environmental sustainability; gender equality; and, improved social development.
[173] Tetra Tech International Development Telephone Survey – Question A1 and A3.
[174] Ibid 8.

who selected the 'Environmental Sustainability' pathway. A 17-point percentage increase was observed since mid-term where it did not feature at all. This was also the case or 'using eco-friendly products for innovative solutions', where an 8-point percentage increase was observed. 'Gender equality' was the least cited expected impact pathway overall. 'Equality within the team' was the most cited area selected within the pathway, which observed a 12-point percentage increase in responses since mid-term. This may suggest an increase in gender equality awareness as a result of the Fund's improved efforts to promote equality and diversity. Newton Fund calls did not require applicants to show the extent of diversity of their teams or to demonstrate how they consider gender equality issues until October 2020.[175] As a result, only half of UK DPs require Award Holders to report gender equality data and the use of gender equality scoring criteria in selection processes was found to vary across partners.[176]

Long-Term Outcome 2: Equitable partnerships, and ecosystems that incentivise innovation and policy application are sustained

Sub Finding

The Newton Fund has established equitable partnerships that are influencing innovation ecosystems in some Partner Countries. However, the extent to which partnerships incentivise sustained innovation and policy application cannot be determined at this stage as it is too soon in the Fund's cycle. Funding uncertainty was raised as a concern which has undermined efforts to secure longer term partnerships.

In-country and UK partners widely cited that partnerships established through the Fund were equitable[177], valued, and beneficial. However, some were uncertain if they would continue in the absence of a clear mechanism to engage in the future.[178] Government and project level respondents were overwhelmingly positive about the value of the partnerships, the shared ownership of priorities and mutual research interests. Over 80% of non-UK respondents to the Online Survey agreed that their project demonstrated 'fair opportunity'; 'fair process'; and 'fair sharing of benefits, costs and outcomes'.[179] Partners in three countries cited the Newton Fund's co-funding requirement as the main attraction for partnering.[180] Some instances of perceived imbalances were highlighted, including: projects being structured or communicated as a transfer of knowledge from the UK partner to the Partner Country;[181] branding or funding attribution where the emphasis was on the UK

[175] The Newton Fund introduced mandatory gender equality requirements for applicants in October 2020.
[176] Tetra Tech International Development Europe, Review of Approaches to Gender Equality the Newton Fund and the Global Challenges Research Fund (2020). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908561/Review_of_Approaches_to_Gender_Equality_report.pdf
[177] 'Equitable' is defined as relationships which demonstrate fair opportunity, process, and sharing of benefits, and outcomes.
[178] Tetra Tech International Development Partner Country Case Studies (2021); In-Country Partner Consultation (2021); and Newton Fund UK Secondary Benefits Study (2021).
[179] Tetra Tech International Development Online Survey - *We'd like to understand how far you agree on the extent to which the project you / your organisation was involved in was an equitable partnership which ensured fair opportunity, process, and sharing of benefits, costs and outcomes of a project. Please indicate how far you agree with the following statements when considering the experiences with the project supported by [Newton Fund local name].* 83% agree / 5% disagree (non-UK) that their project demonstrated fair opportunity; 84% agree / 4% disagree that it demonstrated fair process; 85% agree / 3% disagree that it demonstrated fair sharing of benefits, costs, and outcomes. In all cases, UK researchers agreed to a greater degree.
[180] Tetra Tech International Development In-Country Partner Consultation (2021) - Thailand; Vietnam; Egypt. Internal document.
[181] Tetra Tech International Development Partner Country Case Studies (2021) - Turkey and Brazil.

contribution[182]; publications which did not include local DPs in funding attributions or used local names for the Fund[183]; local country guidelines being omitted from proposal calls; or additional scrutiny placed on evaluation criteria that differed from the UK partner's standard proposal scoring system. Funding uncertainty was raised as a concern which has undermined efforts to secure longer term partnerships. There is no evidence available at this stage to determine the extent to which the current Newton Fund partnerships will incentivise sustained innovation and policy application in Partner Countries.

Efficient management processes, network access and expertise, and industry linkages have helped strengthen research and innovation ecosystems.[184] Newton Fund partnerships were cited to be 'expanding' and 'diversifying' research and innovation networks – where countries have a long-standing collaboration with the UK, that may pre-date the Fund. Such partnerships have enabled countries to scale-up research through different collaboration mechanisms such as joint centres and multilateral/regional programmes, as demonstrated by the UK-China-Thailand-Philippines-Vietnam Rice Initiative.[185] Some partnerships have led to the adoption of new methods, processes, and relationships. In Indonesia and Vietnam, respondents emphasised the utility and influence of Newton Fund partnerships in developing their own co-funding models which have reportedly contributed to the strengthening of national research and innovation landscapes.[186] In the Philippines, the Newton Fund partnership has led to a five-year Memorandum of Understanding in science and innovation between the UK and the Philippines. It provides the basis for future collaboration on areas covering health, resilience and other Newton Fund priorities.[187] In China, the Newton Fund partnership is cited to have paved the way for the first formal UK-China Joint Strategy for Science, Technology and Innovation Cooperation in 2017. In Kenya, the Newton Fund partnership is cited to have contributed to the creation of the Kenya – UK Science and Research Board.[188]

Long-Term Outcome 3: Strategic partnerships unlock opportunities[189] (foreign direct investment; trade) between UK and Partner Countries

Sub Finding
Newton Fund partnerships are creating new opportunities for collaboration between the UK and Partner Countries. However, there is no evidence to date to determine if such collaborations have unlocked trade and investment opportunities.

There are indications that direct or secondary economic benefits are arising from Newton-funded partnerships in the UK. The evidence for this is limited, which is to be

[182] Tetra Tech International Development Partner Country Case Studies (2021) - South Africa and Kenya.
[183] A similar issue was raised by ICAI (2019), highlighted that a review of projects in the UKRI Gateway to Research platform that the collaborating partner in the developing country was not mentioned at all in the project report in several cases. Available at: : https://icai.independent.gov.uk/review/newton-fund/review/
[184] Tetra Tech International Development Partner Country Case Studies (2021) - Jordan, Turkey, South Africa; In-Country Partner Consultation (2021) - Indonesia, Egypt, Vietnam, Thailand, Colombia.
[185] Tetra Tech International Development Partner Country Case Study (2021) - China
[186] Tetra Tech International Development In-Country Partner Consultation (2021) - Indonesia; Vietnam
[187] Tetra Tech International Development Partner Country Case Study (2021) - Philippines
[188] Tetra Tech International Development Partner Country Case Study (2021) - Kenya
[189] 'Opportunities' are interpreted as direct economic benefits arising from Newton-funded research for partner countries and the UK (as the Funds' expected secondary benefit). These benefits include the commercialisation of research outputs; wider economic opportunities for businesses through collaboration and partnerships with the UK (and with Newton partner countries) and the development of broader economic links between partner countries and the UK.

expected at year seven in the fund cycle, as such benefits are associated with long-term impact level change. In addition, the majority of Newton Fund partnerships are not explicitly structured to result in secondary economic benefits for the UK given its nature as an ODA fund, and these outcomes have not been centrally tracked by the majority of Newton Fund Delivery Partners. Nonetheless, UK Award Holders who participated in the telephone survey were broadly evenly split as to whether their project could, or would, result in economic or commercial benefits for the UK (whether directly, for example through the commercialisation of research, or indirectly, for example productivity improvements), with 46% responding 'yes' and 45% responding 'no'.[190]

Partnerships have enabled wider economic and commercial opportunities for UK businesses suggesting potential for greater collaboration which may unlock future trade and investment opportunities. The Fund is enabling economic and commercial opportunities by providing a structure for UK businesses to test and engage with partnerships. UK businesses were reported to be engaging with countries which they would not otherwise have done, and as such, the process was cited to have 'de-risked' collaborations. Newton was cited to be 'unique' as it provides a platform for early-stage innovation collaborations which may lead to economic benefits, albeit in the much longer term. Notably, Newton funding was reported to be providing a distinct opportunity from the trade missions run by the UK DIT; respondents highlighted that these latter missions are highly export-oriented, targeted at market-ready products.

Long-Term Outcome 4: UK is positioned as an international advocate/global leader in Research & Innovation

Sub Finding
The UK is perceived as a global leader in research and innovation among Partner Countries. The Fund has strengthened the reputation of UK research and innovation; however, it is too early to determine if this has led to any new or wider opportunities for collaboration and trade.

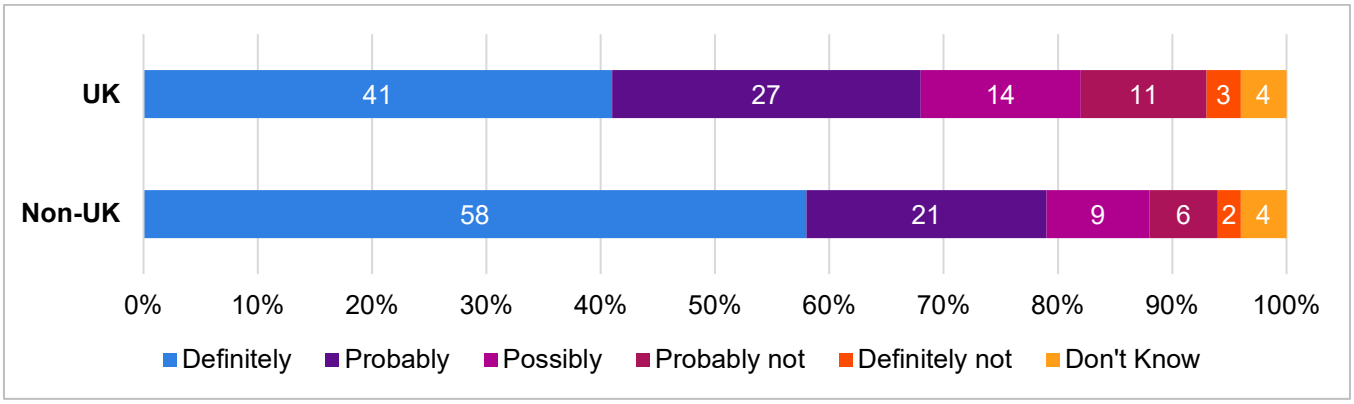
5.5.3 Has the Newton Fund led to a change in perceptions of the UK in Partner Countries? Has this led to any wider benefits such as new or wider opportunities for collaboration and trade?

The Newton Fund has contributed to improving perceptions of the UK among Partner Countries and strengthened the reputation of the UK as a global leader in research and innovation. Elements cited as being particularly attractive for partnering by sampled in-country partners included: the UK's international reputation and expertise; the Fund's co-funding element; access to leading specialist expertise in science and technology, social sciences, energy and nano-sciences; access to accelerators and Catapult centres; and other aspects of research translation.[191] 93% of non-UK-based online survey respondents reported that they perceived UK research and innovation as 'excellent' or 'good', and 80% indicated their perception had 'definitely' or 'probably' improved because of participation in a Newton-funded

[190] Tetra Tech International Development Telephone Survey - *Do you feel that your project has or could result in wider benefits for the UK in the following areas? [Economic / commercial benefits]*
[191] Tetra Tech International Development In-Country Partner Consultation (2021) - Vietnam; Egypt; Colombia; Thailand.

project (as shown in Figure 11). Enabling factors highlighted by telephone survey respondents included the UK being seen to focus on issues of relevance and importance for the Partner Country; the equitable nature of partnerships; avoiding the perception of colonial research relationships; and improved exposure to the UK science sector. However, there is no evidence yet to determine if this has led to any new or wider opportunities for collaboration and trade which is to be expected at this stage of the fund cycle.

Figure 11: Change in perception of the UK as a leader in research and Innovation (UK and non- UK-based respondents)[192]



All in-country partners expressed a strong desire to continue collaborating given the UK's leading reputation in research and innovation. Partners sampled are keen to scale up opportunities, explore new areas of mutual research interest and create more institutional links. Some have already established partnerships outside of the Fund, as a result of connections and relationships with UK Delivery Partners; and others have been invited to participate in other funding schemes (i.e. with the Medical Research Council, British Council and various UK incubators).

5.6 EQ6 Are the benefits achieved by the Newton Fund likely to be sustained? (**Sustainability**)

Summary Finding
Some elements of sustainability are emerging, such as securing follow-on funding; continuing to collaborate or producing publications or other material outputs which provide a durable basis for continuation by design. However, the early-stage nature of some projects and the need to secure further funding to progress towards impact is presenting a risk to the sustainability of some project benefits.

[192] Tetra Tech International Development Online Survey - *Have your views of UK research and innovation improved as a result of participation in the Newton-funded research?*

Strength of Evidence	
	The absence of comprehensive Fund level monitoring data limits the extent to which it is possible to track project outcomes and so assess their long-term sustainability. For this reason, evidence for the sustainability of project-level benefits and relationships between Award Holders draws primarily from the in-depth qualitative case study research (involving 33 separate projects) and triangulated with evidence from the online survey and telephone survey. Evidence for the sustainability of partner relationships has been primarily drawn from the qualitative case study research, consultation with in-country partners and interviews conducted for the UK Benefits Study. To account for the primarily qualitative nature of the data for the latter, we have focused our core findings on themes which were raised by multiple interviewees. As evidenced in EQ5, it is not possible to assess evidence for the sustainability of Fund-level impact as it is too early in the timeframe to assess the extent to which these have been achieved.

5.6.1 How well has sustainability (and the pre-conditions for sustainability) been factored into programme implementation and with what actual and potential effects?

Sub Finding
Some elements of sustainability are evident across the sample – i.e. those that have secured follow-on funding; continue to collaborate; or have produced publications or other material outputs providing a basis for continuation by the wider research community. However, the early-stage nature of some projects and the need to secure further funding to progress towards impact is presenting a risk to the sustainability of some project benefits. A lack of exit strategy and clarity on the future of the Fund are currently posing risks to the sustainability of partnerships.

Projects have produced academic publications and/or other 'material' innovation outputs, suggesting a degree of sustainability by design. Available monitoring data from UK Delivery Partners suggests that the Fund has produced an estimated 5,697 publications[193], secured 164 patents[194] and created 77 spin outs.[195] Academic publications will presumably be available to the wider academic community, while patents and spin-outs provide the basis for commercialisation or distribution beyond the lifetime of the Fund.

The need for some individual projects to secure further funding is a barrier to their progress towards impact or further down TOC pathways. Analysis of telephone survey data from completed projects indicates that only a minority of projects have progressed towards longer term benefits since completion**.** Of 77 respondents who had completed their Newton Fund projects, the majority (66) expressed confidence in the potential sustainability of

[193] Estimate figure from available monitoring data (FY14/15-19/20) provided by six UK Delivery Partners (Academy of Medical Sciences; Royal Society; Royal Academy of Engineering; British Academy, UKRI and the Met Office)
[194] Estimate figure from available monitoring data (FY14/15-19/20) provided by four UK Delivery Partners (Academy of Medical Sciences; Royal Society; Royal Academy of Engineering and UKRI)
[195] Estimate figure from available monitoring data (FY14/15-19/20) provided by three UK Delivery Partners (Royal Society; Royal Academy of Engineering and UKRI)

their project.[196] However, only 6 reported 'real-world' changes which had accrued as a result of the project. This is likely to be due to the early-stage nature of some projects; when asked to expand on their reasons for confidence in sustainability, respondents cited 'material' outputs, such as publications and software; the probable durability of capacity building and research networks; and the potential for further research. However, only 13 projects gave a clear indication that next-stage research was completed / under way or that funding for further research had been secured. Similarly, 8 respondents across the sample indicated explicitly that sustainability would be dependent on securing further funding. For example, one respondent felt that securing funding specifically for humanities research in their Partner Country would be a challenge, given the funding focus on science and innovation.

In-country presence, continued investment, clear engagement mechanisms, continued desirability of the UK as partner, and exit strategies are all necessary pre-conditions for sustainability. The lack of exit strategy and clarity on the future of the Fund are currently posing risks to the sustainability of partnerships. Newton Fund In-Country Teams are a key enabler for building relationships and acting as a source of local knowledge according to most in-country partners, Award Holders and UK Delivery Partners sampled. Their presence was cited to be an important factor for maintaining relationships. However in Chile, which graduated from the OECD-DAC list to High-Income Country status in 2018, the evidence suggests that other conditions beyond presence, such as putting in place comprehensive exit strategies, may be required to sustain the benefits of collaboration over a longer period (see below).[197] In-country partners reported that continued investment is necessary to sustain partnerships. Some were uncertain if collaborations would continue without a clear mechanism (such as the Fund) to engage regularly and if the desirability of the UK as a science partner changes.[198] Frequent time lags between funding opportunities and the associated uncertainty was cited as affecting momentum. Partner Country respondents[199] highlighted that delays in decisions on the future of the Newton Fund have led to a lack of clarity and presented a risk to momentum achieved among stakeholders including delays in planning.[200] In India, delays in establishing a comprehensive narrative that partners can use to communicate the refocus on global development impact with stakeholders has led to delays on decisions for the future of the Fund.[201] Partners also highlighted a lack of emphasis on translation elements, specifically disseminating and commercialising research, networking plans and funding catapults (i.e. centres focused on accelerating application of research) to encourage continuity.[202]

[196] Tetra Tech International Development Telephone Survey - *On a scale of 1 to 5, with 1 being not sustainable (i.e. results did not last beyond the lifetime of the project) and 5 being sustainable (i.e. results will last beyond the lifetime of the project), how do you rate your project result(s) in terms of sustainability? [Follow-up question] Why do you say that?*

[197] Tetra Tech International Development Partner Country Case Study (2021) – Chile.

[198] Tetra Tech International Development In-Country Partner Consultation (2021); Partner Country Case Studies (2021); and UK Secondary Benefits Study (2021).

[199] Tetra Tech International Development Partner Country Case Studies (2021); In-Country Partner Consultation (2021)

[200] The UK Spending Review took place during the same period, and as such decisions on the future of the fund had not been made.

[201] Tetra Tech International Development Partner Country Case Study (2021) – India.

[202] Tetra Tech International Development In-Country Partner Consultation (2021) - Colombia Thailand and Egypt

Spotlight 14: How has the absence of an exit strategy presented a threat to sustainability?

Chile

Chile graduated from the OECD-DAC list in 2018 meaning it is no longer eligible to receive ODA. The Newton Picarte Fund followed a 'bespoke graduation strategy' which sought to ensure the continued relevance of activities to regional objectives as agreed with partners (Newton Fund Process Evaluation, 2017). There is no evidence of a detailed exit strategy for the fund. The last funding call was issued in 2017. The Newton Picarte Fund was found to deliver strong results during its lifetime; however, the longer-term sustainability of these results is more mixed reflecting the fact that the Fund has not been replaced with any comparable instrument. The likelihood of sustained benefits is expected to be significantly lower than those initially expected. The Fund's exit has led to a significant and abrupt reduction in science and innovation collaboration with Chile – which sampled Chilean stakeholders citing the exit as disappointing (Partner Country Case Study – Chile).

5.6.2 What are the long-term impacts that can be anticipated beyond the evaluation period?

Sub Finding

There are promising signs that networks and relationships have developed because of Newton Fund activity, which will provide a basis for future collaboration. Respondents are optimistic about the potential for securing further funding. The need to secure further funding to progress towards impact may threaten the realisation of long-term impact from projects. However, it is too soon to determine what Fund-level impacts have been achieved, and therefore the extent to which they will be sustained is unknown.

The Newton Fund ToC identifies equitable growth and welfare that contributes to sustainable economic development and welfare in support of poverty alleviation in Partner Countries as its anticipated long-term impact beyond the evaluation period (10-15 years), although it is too soon to determine what impacts the Fund has achieved and so the extent to which these benefits will be sustained. As described in Section 4, long-term impact is expected to be realised up to 10-15 years after the Fund began (in 2014). By strengthening research and innovation capacity in Partner Countries the Fund expects to: influence policy and practice; sustain research and innovation ecosystems; and, incentivise innovation and application through partnerships that contribute to equitable growth and welfare. Ultimately, the goal is to contribute to sustainable economic development and welfare in support of poverty alleviation in Partner Countries contributing to the wider achievement of the Sustainable Development Goals. However, as evidenced in EQ5, it is too soon to assess if the Fund has contributed to current or future poverty reducing economic development in Partner Countries and so the sustainability of any long-term impacts at a Fund level are unknown.

The need to secure further funding may pose a risk to the realisation of long-term impacts from specific Newton Fund projects. As evidenced in Section 6.1, the Newton Fund activity has resulted in the production of several 'hard' outputs which will be available to the research and innovation community for the long-term. For example, the "Joint Centres in Agricultural Nitrogen - Indo-UK Centre for Improvement of Nitrogen use Efficiency in Wheat" project delivered open-source software to allow users to screen wheat germplasm which has received over 1,528,817 unique website visits, and its various datasets have been downloaded 48,295 times.[203] However, the ability for projects at an earlier stage of development to progress towards impact will depend on the ability to secure further funding to continue research activities. While some projects have already demonstrated benefits at a local level,

[203] Tetra Tech International Development Partner Country Case Study (2021) – India.

others have not been able to progress in the absence of further funding (as shown in **spotlight 15**).

Spotlight 15: Challenges to sustainability as a result of funding gaps

Brazil	Kenya / Jordan
(Re)Connect the Nexus: Young Brazilians' experiences of and learning about food-water-energy (2016 - 2018) ESRC; Brazilian National Council for the State Funding Agencies, São Paulo Research Foundation	**Researcher Links workshops, 2018 (Kenya) and 2019 (Jordan)** British Council; Kenyan National Research Fund; Jordan Ministry of Higher Education and Scientific Research
This project sought to investigate the relationship between young people and the food-water-energy nexus in a region of Brazil, and develop curriculum resources for schools. From the outset, the research partnership had a strong focus on community engagement and fostering behavioural change at the local level. As a result of these engagements, there are reports that schools have already began to include sustainability considerations in their school curricula, and that the research has made a difference in terms of drawing attention to this issue. Ongoing engagements in participating municipalities has led to interest in take-up of research findings from the Mayor's Office in the nearby city of Potim, where the Brazilian team is currently carrying out a self-funded pilot programme. Findings from the Nexus collaboration are also being applied to inform teacher training materials within the Brazilian partner university itself. However, most other localities reached by the project did not show the same level of interest. To date, research has therefore not yet been mainstreamed in the school curriculum or in policymaking. Despite strong interest to continue work in this area, application for additional funds has so far been unsuccessful. For its follow-on work in Potim, the Brazilian partner is currently relying on internal funding as well as voluntary or self-funded work..	Workshops in Jordan and Kenya were conducted under the British Council Researcher Links calls to bring together early-career researchers in the UK and partner countries to focus on a specific development challenge. In Kenya, the workshop focused on developing the supply chain for indigenous leafy vegetables, and in Jordan the workshop focused on water security and management. Both workshops were relevant to development priorities in the country. Respondents valued the connections they had made. At least two funding bids and one successful project have been completed based on connections made at the workshop (the latter with GCRF funding). However, in both cases some respondents noted that sustainability could be limited by a lack of formal mechanism to capitalise on the workshop activities. At present, funding is only allocated to the main workshop event, and not to potential follow up activities While a roadmap had been published based on findings from the Jordan workshop, the Kenya workshop had not yet published the planned workshop report at the time of writing; as this was not included in the initial budget. this was relying on the workshop convenors working on this in their spare time. Some interviewees in Kenya also reported potential barriers to further collaboration between researchers, given the limited funding sources for collaborations such as these other than the GCRF.

Award Holders are optimistic about their ability to access further funding as a result of their Newton Fund participation, which is a positive sign that the Newton Fund legacy will result in further research activity on topics relevant to local and global development challenges. Online survey respondents were positive about the potential to secure further funding for their research or business activities (which may or may not focus on their specific Newton Fund topic). 34% of online survey respondents stated they had accessed further funding because of participating in the Fund, and a further 43% were expecting to.[204] These funding sources were primarily from public bodies or universities, but funding sources were reported to differ between project types, stages of development, research fields and locations. Meanwhile, 17% of respondents indicated they have not secured further funding and did not expect to, and 6% did not know. Examples of project or further research funding secured were also reported in the case studies and in-country partner consultation. Sources include funding from other UK entities, additional Newton Fund grants, the GCRF, incubators, or venture capital funds accessed through networks and linkages created by Newton Fund partnerships.[205] There were four instances of funding secured domestically in Partner Countries, which suggests continued relevance and engagement in projects locally.[206]

There is a strong desire among stakeholders to continue collaborating through the Newton Fund, which is a positive sign that relationships developed between Award Holders and institutions will continue past the lifetime of the fund. All in-country partners and other stakeholders sampled in Partner Country case studies expressed a strong desire to

[204] Tetra Tech International Development Online Survey - *Has your involvement in the Fund enabled you to access additional funding for your research and / or business activities?*
[205] Tetra Tech International Development Partner Country Case Study (2021) – India; In-Country Partner Consultation (2021) - Vietnam, Indonesia, Egypt
[206] Tetra Tech International Development In-Country Partner Consultation (2021) – Vietnam and Indonesia; Partner Country Case Studies – Brazil and China

continue partnerships established by the Newton Fund and there were some instances of planned follow-on collaborations.[207] Just under a third of UK and non-UK online survey respondents (Award Holders) reported that they plan to continue collaborating after the funding ends.[208] Very few instances of respondents unwilling to pursue partnerships were found, with reasons cited that the partnerships were not positive and respondents' research efforts were not attributed.[209] Similarly, there is strong interest among all respondents in wider bilateral collaboration, with 93% of non-UK and 83% of UK-based online survey respondents indicating that they would be willing to collaborate with partners in the opposite country in future.[210] Telephone survey respondents cited a range of motivating factors including gaining access to new skills and expertise; learning from partners; gaining new insights and improving networks.[211]

[207] Tetra Tech International Development In-Country Partner Consultation (2021); Partner Country Case Studies (2021); and UK Secondary Benefits Study (2021).
[208] Tetra Tech International Development Online Survey - *To the extent that you are able to comment, what are your professional plans for once the project funding under [Newton Fund local name] ends? Please specify how involvement in the [Newton Fund local name] project has shaped your plans.* Open response; responses coded by research team. 27.7% of 1,516 online survey respondents reported they will continue the collaboration after the funding ends.
[209] Tetra Tech International Development - Telephone Survey Completion Report (2021)
[210] Tetra Tech International Development Online Survey - *Would you be willing to collaborate with [UK / Partner Country] partners again in the future?*
[211] Tetra Tech International Development - Telephone Survey Completion Report (2021).

6. Conclusions

This evaluation has assessed the Fund in relation to the six overarching evaluation questions and progress against the Fund level Theory of Change. This section presents the conclusions from the evaluation.

The Newton Fund has delivered research and innovation activities worth £585m, across 18 Partner Countries over a seven-year period. These activities have fostered equitable partnerships that aim to promote the economic development and welfare of Partner Countries in support of poverty alleviation. The Fund is only seven years into implementation; a very short timeframe to observe changes in policy and practice, and thus equitable growth and welfare, from generating new evidence through research and innovation. A longer time frame to observe the effects of complex research and innovation interventions is not uncommon. This evaluation has therefore only been able to assess indicative progress of the Newton Fund towards achieving its intended impact within the current Fund cycle (2014-21).

Fund activities were tailored to differing needs in contexts where the extent of research and innovation capacity is enormously varied. Collectively, our findings suggest the need to think beyond activities, to consider the strategic direction and mechanisms that underpin successful research capacity development and catalyse these for innovation. Research impact is more likely where the underpinning research is of a high quality and where there is an emphasis on to how it translates into innovation for wider application in policy or practice.

1. **The Newton Fund is achieving some of its interim outcomes – with signs of progression towards its more ambitious longer-term outcomes (i.e. influence on policy or practice).**

    - **The Fund's ability to collaborate through partnerships, at the individual, institutional and country level, is a core strength.** Effective, multidisciplinary collaborations have resulted in at least 5,697 publications, 3,597 engagements, 164 patents and 77 spin outs to date.[212] The Newton Fund has developed research and innovation partnerships between the UK and Partner Countries which have enabled individuals and institutions to improve research quality, develop new skills, and access resources and networks. International collaborations have contributed towards establishing the UK as a research partner of choice, which is helping to position it in the global research and innovation space.

    - **Individual and institutional capacities have been improved, but this may not result in wider systems level influence, or a global ecosystem to address development challenges in the absence of a strategy to do so.** The interdisciplinary nature of the Fund has improved the relevance and quality of research and individuals, and Partner Country institutions have enhanced their research and innovation capacity. However, there is little evidence of wider systems level capacity strengthening, or in-depth assessment of capacity gaps and needs in Partner Countries. A significant number of awards intended to develop individual capacity have been concentrated among already high-performing institutions. A Fund level strategic approach to drive activity to influence system or country level change is needed to establish and maintain research and

[212] Estimate figures from available monitoring data (FY 14/15-19/20) provided by seven UK Delivery Partners.

innovation ecosystems and leverage cross-pillar activities at the country, regional and global level.

- **Fund activities (awards) have improved translational capacity, but not all activities appear to have been designed to translate into policy or practice.** Many activities were intended to be 'early-stage' and did not consider translation aspects in their design. As a result, many have not managed to secure further funding. Fund support is considered very important for early-stage innovation projects; but their time-limited nature often means that progressing to commercialisation is contingent on securing further funding. Translation effects take a much longer time than the project lifecycle and they do not always materialise after a research publication or an innovation has been produced. Overall, the focus on innovation, translation and impact activities is underdeveloped and there is a risk that activities will not attract further funding to translate into use, and therefore not achieve impact in the longer term.

- **Research, people, and translation activities (or pillars) are interdependent – but they are not strategically linked to catalyse change within or beyond individual projects.** As mentioned, not all projects have been designed with translation in mind. The evidence demonstrates that the pathway from research to translation has not happened as expected: i.e. that activities strengthen capacity, produce quality research or solutions, leverage investment and influence policy or practice which then influences socio-economic or welfare change at the country, regional or global level. While this is in part due to timing - the fact that translation effects are much more long-term - it is also a result of poor design, and weak overall consideration of how projects and partners expect to impact socio-economic change in the long-term.

- **Equitable partnerships are a key differentiator of the Fund, but there is a need to ensure engagement is sustained.** The Fund has established partnerships that are valued and mutually beneficial; improved research quality and enabled forms of collaboration (such as tapping into the knowledge of co-PIs and accessing local uptake channels) that would not have necessarily been available under a unilateral model. Further to ensuring the additionality of the research projects themselves, partnerships have contributed to a different kind of additionality, where outputs are of better quality and more relevance than what would have been possible under a solely donor-driven model. The ability to obtain senior level buy-in and reflect Partner Country priorities were consistently highlighted as attractive partnership features. Communication between partners, in-country networking, co-creation of proposals and research calls, and established relationships are all critical factors for successful partnerships. In Indonesia and Vietnam partnerships have influenced the development of new co-funding models which have leveraged commitment from governments.

- **The time lag between conducting research and resultant impact means that it is too early to assess Fund level impacts. However, there are emerging signs of some activities beginning to influence on policy and or practice**. Many projects are at the early stage of research uptake or have not yet included any translation plans in the design. Several challenges with translation were highlighted, including the time lag between conducting research and resultant impact and the need for continued funding to support this trajectory. While some benefits are being reported at project-level, there are fewer examples of influence at national-level policy or practice change. The wider socio-economic impact of these initiatives is yet unknown. Follow-on funding, timing,

relationships and the profile of the Newton Fund were all necessary preconditions that have helped 'open doors' to influence and/or translate into policy or practice.

- **Partner Countries perceive the UK as a global leader in research and innovation, but there is limited evidence to determine if this has led to any new or wider opportunities for collaboration and trade.** While views of the UK's capabilities in research and innovation were positive prior to the Newton Fund, it has strengthened the UK's reputation in Partner Countries by focussing on issues of relevance and promoting equitable partnerships. Enabling factors include the Fund's co-funding element and access to accelerators, Catapult centres and leading specialists in science and technology. Even though many projects were not structured in a way to produce benefits directly applicable to the UK, many did so, for example by developing academic and innovation links, producing high-quality academic outputs, and tapping into Partner Country expertise. In some cases, reference was made to potential economic or commercial outcomes.

2. **The Fund is relevant to the enormously varied needs of Partner Countries, but the lack of overall strategic direction risks undermining the progress made and the potential to leverage synergies at the country, regional and global levels.**

Newton Fund activities are consistent with and relevant to the higher-level goals of the Fund. Projects sampled provided assurance that the activities delivered have been designed in line with the Fund's purpose. The Fund implements a thematically open approach, which allows any aspect of research or innovation to be supported under three pillars - Research, People and Translation – across 17 OECD-DAC listed Partner Countries. The Fund would have benefited from a strategic approach on how a diverse set of activities would collectively contribute to sustained positive socio-economic outcomes in Partner Countries or on how Fund investments would have a mutual benefit for the UK. A solely project-level approach does not build on synergies or bring about systemic change, and without a Fund-level strategy it is unlikely that the Fund will fully achieve its intended impact in the longer-term.

The Fund works through partnerships from the bottom-up, with Delivery Partners co-designing and co-selecting research and innovation projects. Delays in producing refreshed country strategies to drive strategic direction and funding priorities has resulted in missed opportunities to align activities across the pillars to support specific country needs, thereby maximising their relevance. There is little evidence of a systematic approach to addressing country-level challenges between partners. Annual allocations also limit the extent to which partners can plan for more strategic approaches. The Fund has supported activities addressing a wide range of global challenges through a relatively devolved selection approach, with limited strategic direction.

The purpose of the Fund is to address a concurrent set of objectives; improving economic development and welfare to support poverty alleviation in Partner Countries, and contributing to strengthening the UK's research and innovation base (and its wider prosperity, security and global influence). The latter, a secondary purpose of the Fund, is not clearly articulated.

3. **Fund activities are coherent and complementary with Partner Country priorities. The Fund is successfully coordinating partnerships to deliver activities through multidisciplinary approaches that would not have been achieved through a unilateral funding model.**

Partnerships are complementing the work of Partner Country stakeholders at the project-, country- and regional-level. The partnership approach has produced results (strong relationships and links between institutions and more relevant research) that would likely not have been achieved through a unilateral funding model. The interdisciplinary focus of the research has coordinated projects in a variety of ways and in some instances has encouraged coordination between wider actors in Partner Country research and innovation systems. However, there are some perceived imbalances which need to be addressed. These include, for example: cases in which the project structure overly emphasised the transfer of knowledge from the UK; call selection criteria omitted Partner Country guidelines; branding and publications which emphasised the UK contribution; and, in South Africa, concerns that the focus on excellence as a selection criterion may present a barrier to the inclusion of historically disadvantaged institutions and groups in the research.

4. **Follow-on funding is necessary to continue collaborations and partnerships and, for some projects to progress towards impact.**

The ability for Newton Fund participants to access funding (whether from BEIS or other sources) is necessary for building on and, in some cases, realising the intended objectives and benefits of Newton Fund project activity. This includes the need for funding new collaborations and partnerships to maintain UK-Partner Country academic networks. Similarly, given the early-stage nature of some Newton Fund projects, additional funding will be required for these outputs to progress to a stage at which they can result in socioeconomic impact (for example, through further research or commercialisation activity).

5. **There is scope for BEIS to better promote synergies between the Newton Fund and other HMG funds to leverage any potential catalytic effects.**

The Newton Fund shares a common oversight and management structure with the GCRF, which is the UK's largest ODA research and innovation fund. While BEIS works in partnership with other HMG departments to achieve Fund coherence, there is scope for BEIS to promote more internal and external synergies and greater strategic alignment. This includes clearly differentiating Newton from Government's other Funds; that is, to set out where the Newton Fund's purpose fits in relation to other Funds', how it differs, how it focusses on driving impact through early-stage research and innovation in LMICs, and how this difference can complement the work done by other Funds.

6. **The Fund has improved its commitment to gender equality. Diversity levels among UK Award Holders are weighted towards men (two-thirds), and while this reflects the situation in the wider UK research landscape, this could be improved.**

BEIS introduced mandatory gender equality statements for all Fund activities in October 2020, indicating a commitment to gender equality, and recognising that the Fund did not establish gender equality objectives from the outset. Diversity levels among UK Award Holders are weighted towards men (two-thirds), and while this reflects the situation in the wider UK research landscape, this could be improved. Crucially, gender (or ethnicity) disaggregated data is not currently collected for non-UK Award Holders which presents a gap in the evidence base. Data of this kind would inform the critical assessment of gendered differences in terms of potential beneficiaries, benefits, and impacts.

7. **There are emerging signs the Newton Fund is generating value. Value for Money at Fund level is less well evidenced than at project level.**

As noted earlier, international collaborations are relevant to country needs, have yielded outputs and there is evidence of achievement and progress towards the Fund's longer term outcomes. This demonstrates progression along the expected pathways of the Fund's TOC towards intended impact. Although it is too early to assess the impact, the Fund will miss opportunities to maximise the relevance and effectiveness of activities at country-level and beyond in the absence of a strategy to do so.

Newton Fund activities are largely found to be additional – i.e. they would not have taken place without the Fund, which demonstrates the Fund's additionality in a context where there is a lack of alternative funding for international collaborations with the UK. The Fund has also leveraged matched financial contributions from partners estimated to be at least 30% of the overall value of the Fund, in addition to further non-financial support.

There are emerging UK benefits, all of which are positive indications of VFM at the Fund level. Although there is emerging evidence that the Fund is generating value, the extent to which the Fund is producing VFM in its entirety is unknown, due to monitoring data gaps. BEIS developed a VFM rubric framework in 2020 which was piloted at the project-level during the evaluation period. These pilots have produced learning to improve the approach and early insights into how the Fund is delivering project-level VFM. The rubric is still experimental and its pilot results cannot be generalised to the Fund level. Prior to this, the Fund did not have a Fund-level framework to determine or monitor VFM. BEIS has not set out clear requirements for DPs to monitor VFM and collect the relevant data. There is a need to evolve the existing VFM rubric to assess Fund-level VFM and put in place the necessary systems to collect the data required.

8. **There is no Fund-level sustainability (or exit) strategy in place. This will compromise the likelihood of sustainable impact being achieved and may negatively affect the UK's global reputation in research and innovation. In-country presence, follow-on funding and exit strategies are all necessary pre-conditions for sustainability.**

Fund-level benefits or impacts have yet to fully materialise, therefore the extent to which they will be sustained cannot be evaluated at this stage. However, there is no Fund-level sustainability (or exit) strategy, nor a country-level exit strategy in place. Newton Fund in-country presence, follow-on funding (given the time lag associated with translating research into impact), and clear exit strategies are important factors for the achievement of sustainable longer-term benefits. While there is some evidence of projects securing follow-on funding, continuing to collaborate, or producing 'hard' research outputs, some projects are at risk of not realising their intended benefits owing to a lack of funding for the further research or development activity required for the project to result in impact.

Despite a very strong desire to continue, some in-country and UK partners were uncertain if collaborations would continue without a clear mechanism to engage with institutions regularly. The lack of exit strategy has been a challenge in Chile (the first Partner Country to graduate from the OECD -DAC list), where the likelihood of sustained benefits is expected to be significantly lower than initially expected. The Fund's exit led to an abrupt reduction in science and innovation collaboration which resulted in the loss of information and momentum despite a continued need for capacity support in science and innovation in the country. The absence of such strategies means that the preconditions for sustainability are likely not in place and this limits the likelihood of long-term benefits or impact being achieved and sustained, as well as the risk that current positive perceptions of the UK as a partner may be undone.

9. The lack of a comprehensive Fund-level data monitoring system hampers monitoring efforts and limits future evaluative activities.

While UK Delivery Partners gather internal monitoring data across a variety of data collection systems (e.g. Research Fish and Research Gate) there is currently no harmonised approach to gathering Fund-level monitoring data. Monitoring trackers (such as BEIS' activity tracker) were gradually put in place during the first year of operation and improved over time, albeit with data gaps and limitations in consistency. Fund level data is required to enable smaller units of analysis to be comprehensively aggregated to monitor activity-to-output results for accountability and management purposes. For outcomes and impact, greater units of aggregation are required.

There are considerable differences in how UK Delivery Partners collect and categorise data, which limits aggregation and comparability. Inconsistencies are evident across the DPs and stem from a combination of the lack of requirement and definition on reporting requirements for the Newton Fund (beyond financial reporting) combined with mixed monitoring and evaluation capacity internally. There is also no data available on unsuccessful award applications, which in most cases is not collected. If left unaddressed, this may jeopardise future evaluative activities, notably that different levels of analysis between different programmes and DPs will not be possible, and a reduced ability to assess what kind of applications were funded as compared with their unsuccessful counterparts.

The initial analysis (2016) and mid-term (2018) phases of this evaluation, and ICAI's review of the Fund (2019), similarly raised the lack of Fund monitoring data as a key challenge. We recognise that BEIS has taken steps to address the issue, which include launching the Official Development Assistance Financial and Programme Reporting Transformation (ODART) in 2019, introducing Cross-Fund KPIs in early 2020 and most recently, launching the Reporting Official Development Assistance (RODA) system. Six DPs were successfully onboarded to the RODA reporting system in May 2021.[213] The first stage of RODA focuses on improving financial reporting at the Fund, programme and partner level, including tracking match effort (in kind; reciprocal and co-funding) from quarter one FY21/22. BEIS intends to further develop the RODA system's capacity for MEL reporting functions.

[213] All Fund Delivery Partners are expected to be onboarded by the end of quarter one FY 21/22.

7. Recommendations

This section presents our recommendations. It builds on the conclusions, providing some practical pointers for any future phase of the Newton Fund. The seven recommendations are intended to help take account of the insights from the Newton Fund evaluation for any future Fund cycles beyond 2021.

1. **The Fund, or any future similar Funds, should put in place an overarching strategy to clearly identify its purpose and the outcomes and impacts expected from across the portfolio.**

The Newton Fund is a global mechanism – spanning 17 countries each with varied needs and ambitious objectives. An overarching Fund strategy is required to understand how its diverse set of activities will collectively contribute to sustained positive socio-economic outcomes in Partner Countries. A Fund level strategy should:

- provide clarity on the Fund's overall primary and secondary purposes, setting out how they interact to achieve long-term, sustainable socio-economic impact. This should include clear overarching objectives in relation to a) research and innovation capacity building goals, b) the distribution of resources, c) the balance between pursuing research excellence and other objectives (such as ensuring equitable partnerships and capacity building), and d) the role of secondary benefits, including the extent to which they are (or are not) expected to guide project selection.

- provide further clarity on the expected pathways between economic development and socio-economic impact to guide Fund activity in this area. This should include, for example, the interplay between varying objectives to support the development of affordable and/or impactful technologies, create jobs, support SMEs and alleviate poverty (and which should be prioritised where necessary); and analysis of the risks of potential social harm from funded activities (for example, whether industries targeted by projects are engaged in socially harmful practices).

- elaborate a high-level continuum to structure the expected trajectory from research to innovation and ultimately impact. Recognising that such a trajectory will differ hugely in various contexts; it should be overarching, with nested country strategies tailored to the specific context and priorities of each country's respective research and innovation ecosystem (see recommendation 2).

- provide clear objectives for the selection and allocation of fellowship / capacity building awards to ensure that the individuals and institutions funded will advance the Fund's capacity-building objectives. This should include: analysis of country-specific needs and gaps; guidance on thematic areas to be funded, or a clear justification for the funding of projects that do not focus on development challenges; and consideration of the balance between selecting awardees based on research excellence criteria, and selection based on where capacity building will maximise benefits for the Partner Country.

- provide further clarity on expectations as to the Fund's focus and goals for mainstreaming diversity, inclusion and environmental sustainability, addressing the fact that these cross-cutting objectives were not explicitly considered from the outset. The

ODA R&I Funds gender equality policy recently published by BEIS offers a model for how this can be approached.

- identify potential internal and external synergies between Partner Countries, regions and with other similar funds to enable the Fund to align programming to leverage any potential catalytic effects, and clearly differentiate its offering.
- set out a Fund level exit strategy for the eventual exit of the Fund; or for the transitioning of support via new partnerships or assistance to ensure continuity and sustainability of any benefits achieved in Partner Countries and the UK.
- further reflect on the relevance of the current Fund-level Theory of Change, in the context of the strategy.

2. The Fund should prioritise developing new Partner Country strategies in collaboration with funding and Delivery Partners, to ensure a clear purpose and intent within each country context, and to ensure that each focuses on the sustainability of Fund achievements to date.

Recognising the enormously varied needs and strengths of Partner Countries' research and innovation ecosystems, new country-level strategies would provide an opportunity to co-identify and align priorities with the needs of partners and the Fund objectives. Partner Country strategies should:

- identify strategic country-level research and innovation capacity and thematic priorities.
- tailor the Fund's expected trajectory from research to innovation based on the country context, needs and desires. The process should be collaborative to identify what the priority research and innovation capacities are and build on existing communities of practice or synergies.
- set out a country-level Theory of Change describing the path of how a Newton Fund initiative expects to achieve its end outcomes to complement country strategies and nest within the Fund-level Theory of Change. This may be a generic ToC which sets out the expected dynamics of the Fund within a Partner Country, or a ToC specific to each country.
- facilitate more thematically aligned and complementary programming and calls at country-level, offering more strategic direction to Delivery Partners and Award Holders when designing projects.
- set out a tailored country-level exit strategy for the eventual exit of the Fund, or for the transitioning of support via new partnerships or assistance to ensure continuity and sustainability of likely benefits to Partner Countries. Exit strategies should consider any implications for continuity of the work of Delivery Partners within the funding period.

3. Retain the key elements of the equitable partnership model in any future Fund cycle.

The underlying principle of the Newton Fund is based on building equitable partnerships between the UK and other countries. It supports bilateral partnerships between the UK and selected MICs which are agreed at inter-governmental level. The aim of each partnership is to build research, science and innovation capacity and address specific development challenges

affecting the selected LMICs or Partner Countries. Country partnerships are framed by an overarching government to government agreement and underpinned by memoranda of understanding which are intended to set high-level direction. They are complemented by close working collaborations between UK and in-country Delivery Partners who then design and deliver calls or programmes to meet the identified needs.

The partnership model is highly valued, mutually beneficial, and unique in its offering at country- and Delivery Partner-levels, and thus a key differentiator of the Fund. The requirement of matched effort is contributing to its equitability; it is an attractive feature that has in some cases, secured firm commitment and leverage from country-level institutions which would otherwise have been more difficult to achieve. The model facilitates the co-design of priorities, engages senior-level buy-in and reflects partners' priorities and interests. Crucially, it enables several critical success factors for effective delivery which include the formation of equitable relationships, co-creating research calls and programmes, exchange of knowledge and skills, providing a platform of engagement between partners, and creating linkages for wider engagement in the research and innovation ecosystem. Thus, any future Fund cycle should adopt a similar approach, to best position the Fund to achieve its objectives.

4. **The Fund should now focus more on ways to better enable projects to influence practice or policy by helping projects to access the next stage of funding or other support they need to progress towards impact.**

Continued engagement with stakeholders and securing follow-on funding are critical success factors for pathways to impact. New research, people and translation activities should be designed to include a focus on translation, including sustained engagement. This will encourage involvement of non-academic partners, including the private sector which will help to commercialise or otherwise to adopt or implement the new evidence or solutions created. Building on the strategy work mentioned earlier, Delivery Partners should be more strategic in the framing of programmes and calls, to ensure that their activity in-country is linked to the Fund-level and country-level strategies and objectives. This may include introducing additional flexibility into the way DPs allocate resources in-country, to enable the scaling up of promising programmes and supporting projects to progress further towards impact. More robust monitoring and evaluation procedures would help ensure that calls are more closely linked to strategic priorities or plans and determine what types of follow-on funding instruments may be appropriate.

The Fund introduced the Newton Impact Scheme in 2019, which is a positive step towards enhancing continuity and addressing the funding gap that has emerged on the research to innovation trajectory. The Impact Scheme should be expanded taking into consideration the need to:

- provide a platform to direct activities towards opportunities to translate their work into use at the end of their grant periods this could include further Newton funding or other sources.
- scale up the scheme to address the funding gap for the continuity of projects that are likely to achieve long-term benefits. Funding decisions should be made systemically (i.e. based on evaluative judgement derived from comprehensive monitoring data and a firm link to the expected impact of the Fund at the relevant level).

5. **The Fund should develop and extend its Value for Money rubric framework for use at Fund level.**

To assess VFM on a regular basis, the Fund should collect relevant data in a harmonised way (see recommendation 6). In summary, a Fund level approach should:

- provide stronger requirements for delivering and monitoring VFM with Delivery Partners. Expectations should be conditional in grant agreements to help guide Delivery Partners on what data is required.
- reflect Fund and country-level priorities and expected outcomes in VFM assessments. This should include collecting more in-depth qualitative data across a representative, systematic sample to ensure scores and findings can be generalised for extrapolation at the appropriate levels in the delivery chain.
- develop cost-effectiveness benchmarks to complement the existing methodology against which Newton Fund activities can be compared. Benchmarks should be derived from existing examples of best practice in research and innovation to illustrate the level of ambition and impact the Fund expects, proportionate to the funding provided. Benchmarks or best practice could be drawn from internal (within the Newton Fund) and external sources (such as the GCRF, the EU funded Horizon 2020).
- provide clear, VFM-based insights and learning that the Fund and Delivery Partners can act on.

6. The Fund should further expand the recently launched RODA system to capture wider MEL progress reporting data for accountability, management, and evaluation purposes.

The recently launched RODA system (focussed on improving financial reporting) could be further developed to capture wider MEL reporting requirements. A fund-level data monitoring system should be designed to a minimum standard to gather a uniform set of Fund indicators. Putting in place standard Fund-level indicators, with clear definitions and guidance should help Delivery Partners collect and report data in harmonised way. These indicators should be tailored to the Newton Fund's needs, complement the published Cross-Fund Key Performance Indicators, and consider:

- introducing specific monitoring indicators to capture the Fund's anticipated mutual or secondary benefits to assist any future efforts to evaluate the Fund impact.
- establishing a core set of output indicators and require all Delivery Partners to report on these annually.
- collecting data on all Newton Fund awards and unsuccessful applicants. A comprehensive overview and profile of funded activities and awards would inform evaluation sampling methodologies' scope to improve representativeness and support learning. Management data on unsuccessful applicants would allow the Fund to review its selection criteria and processes.
- collecting data on awards that have secured further follow-on funding. Information on specific non-academic beneficiaries of the funded activities should be a part of this, to enable evaluators to follow up and have a basis on which they can sample and contact relevant stakeholders.

BEIS should also establish a central repository of all internal evaluation activities that DPs have conducted on their programmes or calls throughout the Fund cycle. This repository would

be a useful resource to complement monitoring efforts and provide a basis for any future evaluations to identify underserved areas.

7. **The Fund should commission a future impact evaluation to understand what impact it has produced - positive and negative, intended, and unintended, direct, and indirect.**

An impact evaluation would determine the extent to which the Newton Fund has made a difference. This would provide evidence of observed impacts produced by the Fund; positive and negative, intended, and unintended, direct, and indirect. It should also seek to understand what has worked, for whom, where and why, to establish the cause of observed impacts and the causal attribution. Possible effects as a result of Covid-19 should also be investigated. Consideration should be given to the following factors when commissioning the impact evaluation:

- **Get the timing right**. Ideally, it should take place in years 8-12 of the Fund's cycle as denoted in the Theory of Change. It is important to ensure impacts have had sufficient time to develop and to maximise opportunities to inform decision-making and learning.
- **Define the purpose**. This purpose will alter depending on the timing. Generally, impact evaluations can be undertaken to improve or reorient an intervention (i.e. for formative purposes) or to inform decisions about whether to continue, discontinue, replicate, or scale up an intervention (i.e. for summative purposes). They are mainly used for summative purposes, producing findings about 'what works' and providing information about what is needed to make the intervention work for different groups in different contexts.
- **Ensure objectives are specific.** The objectives should be to determine what impact the Newton Fund has made against its primary and expected secondary benefits, to understand what has worked to benefit sustainable economic development and welfare in Partner Countries, and to determine if any secondary benefits to the UK have been realised. It should also assess the extent to which the Fund has provided value for money.
- **Articulate its use.** The evaluation's intended use should be clearly identified. Its timing should be aligned with when its findings will be of most use. It should also consider: its relevance for accountability and learning, for example any relevance to the wider Departmental policy or ODA portfolio strategy; its potential usefulness; the commitment from senior managers or policy makers to using its findings; and/or its potential use for accountability requirements.

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