



Department for  
Science, Innovation  
& Technology

# Newton Fund Evaluation

Annexes to the Impact Evaluation Final  
Report

March 2026

## Acknowledgements

The team is grateful to the Department for Science, Innovation and Technology (DSIT) and partner organisation colleagues for facilitating the evaluation, and to former Newton Fund stakeholders for contributing their valuable time.

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The views expressed in this report are those of the evaluators. They do not necessarily represent those of DSIT, or any individuals and organisations referred to in the report.



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# List of acronyms

AHRC	The Arts and Humanities Research Council
AMR	Anti-microbial Resistance
AMS	The Academy of Medical Science
API	Application Programme Interface
BBSRC	The Biotechnology and Biological Sciences Research Council
BEIS	The UK Department for Business, Energy and Industrial Strategy
CIMO	Context-intervention-mechanism-outcome
DORA	Declaration on Research Assessment
DSIT	UK Department for Science, Innovation and Technology
ECR	Early Career Researchers
EDI	Equity, Diversity and Inclusion
EQ	Evaluation Question
ESRC	The Economic and Social Research Council
FCDO	The UK Foreign, Commonwealth and Development Office
GBP	Great British Pounds
GCRF	The Global Challenges Research Fund
GRI	DSIT's Global Research and Innovation Team
GtR	Gateway to Research
ICAI	The Independent Commission for Aid Impact
IP	Intellectual property
ISPF	International Science Partnerships Fund
KII	Key informant interview
MCR	Medical Council of Research

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MIC	Middle-Income Country
MRC	Medical Research Council
NCD	Non-Communicable Diseases
NCI	Normalised Citation Impact
NERC	The Natural Environment Research Council
NMF	Non-negative Matrix Factorisation
NMR	Nuclear Magnetic Resonance
ODA	Overseas Development Assistance
OECD-DAC	The Organisation for Economic Co-operation and Development - Development Assistance Committee
ORC	Organic Rankine Cycle
PI	Principle Investigator
PO	Partner Organisation
RMT	DSIT's ODA Research Management Team
RODA	Reporting Overseas Development Assistance
RSS	The Royal Scientific Society
SDG	Sustainable Development Goals
SPS	Silvopastoral Systems
SRTI	Science, Research, Technology and innovation
ST	Science, Technology and innovation
STEM	Science, Technology, Engineering and Mathematics
STFC	The Science & Technology Facilities Council
TF-IDF	Term Frequency-Inverse Document Frequency Algorithm
UK	The United Kingdom
UKRI	United Kingdom Research & Innovation

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# Annex 1: Outcomes module

## Introduction

The Outcomes module sought to establish and explore the contribution of the Newton Fund to longer-term outcomes, including those specified in the Theory of Change (ToC) (i.e. intended outcomes) and other unintended outcomes. The Outcomes module supported the evaluation by:

- providing evidence on longer-term outcomes achieved through Newton Fund investment
- assessing whether and how Newton Fund structures and processes have enabled these outcomes, and identifying any barriers or constraints to the Fund achieving the intended outcomes
- providing insights into progress towards the achievement of outcomes
- identifying mechanisms to support learning from longer-term operation of the Newton Fund to inform delivery of current and future overseas development aid (ODA) funding, including the International Science Partnerships Fund (ISPF).

## Approach and methodology

This module focuses on the longer-term outcomes outlined in the ToC around policy influence, equitable partnerships and ecosystems, and strategic partnerships that unlock opportunities in foreign direct investment and trade between the UK and partner countries, and finally that the UK is positioned as a leader in global research and innovation. It provided evidence to address the following evaluation questions (EQs) and sub-questions:

**Table 1. EQs**

No.	EQ
1	<p>What long-term outcomes (intended and unintended) has the Newton Fund contributed to? Has the Newton Fund achieved the longer-term outcomes set out in the Newton Fund ToC? Have any primary (i.e. for development) and secondary (i.e. for UK) longer-term outcomes been achieved that are additional to those set out in the ToC?</p>
3	<p>How far has the Newton Fund contributed to research and innovation (R&amp;I) systems in the UK and partner countries? How has it worked with other R&amp;I funding streams (including the Global Challenges Research Fund – GCRF)? How far and in what ways has the Fund supported career progression of women and researchers from minority groups? Is there any evidence of equity, diversity and inclusion (EDI) improving in R&amp;I systems? What, if any, is the contribution of Newton Fund programmes and awards?</p>
4	<p>What factors have supported or hindered the Newton Fund from contributing to long-term outcomes and impacts? How and in what ways have distinct features of the Newton Fund model (including government-level partnerships, equitable partnerships, matched funding and in-country presence) supported or hindered contributions to change? How and in what ways have the management and delivery mechanisms of the Newton Fund supported or hindered contributions to change?</p>

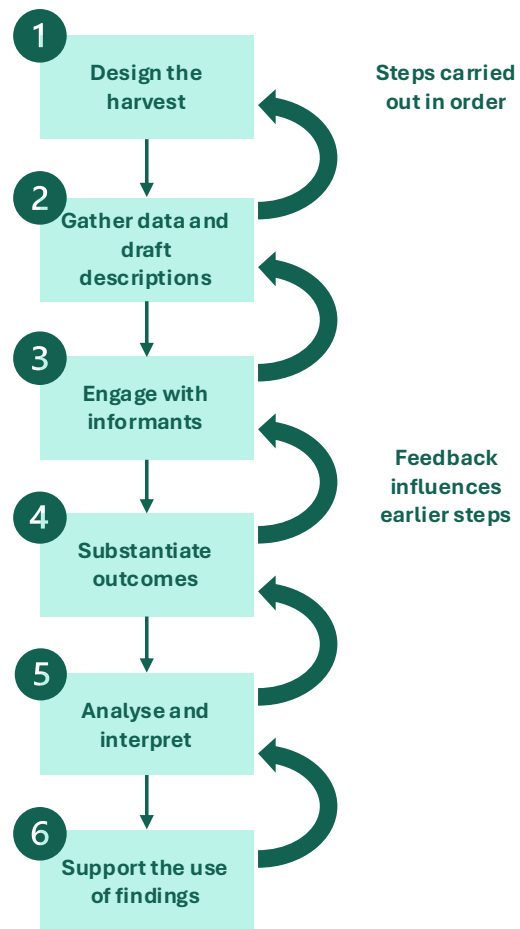
## Scope

The Outcomes module looked at the Newton Fund as a whole, seeking to identify outcomes achieved across the Fund's portfolio. We first conducted a document review of existing reports on the Newton Fund (e.g. evaluation reports, annual reports, case studies) to identify Fund-level outcomes. This was followed by more in-depth assessment and evidence-gathering from a sample of 50 awards to provide evidence that supports the contribution of the Fund to the identified outcomes.

## Approach and methods

The study used outcome harvesting to deliver this module. Unlike other evaluation approaches, outcome harvesting is not intended to measure progress towards predetermined outcomes or objectives. Rather, the evaluator collects evidence of what has been achieved and works backwards to determine whether and how the project or intervention contributed to the change.<sup>1</sup> This method is especially designed to encourage participation of different stakeholders in M&E. Outcome harvesting consists of the six steps shown in Figure 1.

**Figure 1. Outcome harvesting steps (Intrac 2017)**



Outcome harvesting is particularly suitable for this evaluation, because: (a) this is an *ex-post* evaluation focused on what was achieved and how; (b) the Fund and wider landscape are complex, with diverse, unexpected outcomes; and (c) there is sufficient existing evaluation data to support document review that underpins the harvest. This approach mitigates a key risk of theory-based evaluation – only investigating outcomes and pathways articulated in the ToC and no other achievements. Outcome harvesting helps ensure we evidence outcomes beyond those outlined by the small UK-based group involved in ToC development.

## Methodology

The outcome harvest for the Newton Fund involved a structured process to identify and analyse the Fund's impact. This included developing harvest questions, reviewing documentation, refining outcome descriptions, and collecting data from award-level research. The findings were then analysed, triangulated, and discussed in an implications workshop with DSIT to identify key learnings and implications for future funds.

<sup>1</sup> Intrac for civil society (2017) Outcome Harvesting. <https://www.intrac.org/app/uploads/2017/01/Outcome-harvesting.pdf>

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The methodology used six steps that map to the outcome harvesting Steps 1–6, as described below.

### **Step 1: Design and scoping**

During the scoping stage, we conducted an initial document review of existing evaluation reports for the Newton Fund, which identified a long list of outcomes, grouped into five themes:

- capacity strengthening
- commercialisation
- creating a culture of innovation
- influencing policy, practice and strategy
- partnerships building.

From this, we developed a set of distinct ‘harvest questions’ to guide the outcome harvest, which provide a framework for structuring the investigation around common themes to facilitate outcome identification and contribution analysis. The harvest questions were:

- What has been the effect of the Fund on furthering research opportunities for award recipients?
- How has the Fund improved capacity to commercialise innovative products or solutions in partner countries and the UK?
- What has been the effect of the Fund on influencing science, research, technology and innovation (SRTI) policy development in partner countries and the UK?
- What has been the effect of the Fund on creating a sustainable SRTI ecosystem?
- How has the Fund contributed to creating and embedding an innovative culture in institutions/governments?

### **Step 2: Document review and longlist of outcomes**

Next, we reviewed Newton Fund documentation, including ICAI’s review of the Fund, existing evaluation reports, annual reports and academic papers on the Fund, to identify potential outcomes or changes, and we developed a longlist of high-level outcomes, a selection of which will be investigated in depth in Step 3. The longlist served as a database to capture outcomes identified throughout the harvest.

In addition, we used the following datasets to source additional outcomes and support scientometric analysis that will inform the outcome descriptions: RODA, Researchfish, WoS, OpenAlex, Overton (for grey literature focused on policy use of R&I), and Derwent.

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### **Step 3: Refine outcome descriptions in consultation with DSIT**

The longlist of outcomes was reviewed, and a selection of 15 outcomes was taken forward. To identify the 15 outcomes, each high-level outcome in the longlist was categorised according to (i) theme identified in Step 1, (ii) pillar of the Newton Fund, and (iii) country. Where possible, we consolidated outcomes from the longlist to ensure we took forward detailed and robust outcomes that apply across the Fund rather than to specific countries or awards. We also aimed to ensure that all countries were represented.

For each of the 15 outcomes, we drafted an initial contribution story and assigned a level of significance to the outcome based on desk research. Each of the selected outcomes was written up, outlining the outcome, significance and contribution. These were refined in a workshop with UK Department for Science, Innovation and Technology (DSIT) and partner organisations (POs), in which they explored the outcomes identified and, for each one, discussed the accuracy, contribution (or not) of the Fund to this outcome, and any positive or negative changes that may have occurred.

Additional outcomes identified in the workshop were also described and explored. Then the outcomes were arranged according to significance of contribution (measured as the level of improvement because of the Fund) and developed outcome descriptions.

### **Step 4: Data collection to substantiate the outcomes**

After this, we verified and substantiated the 15 outcomes by selecting a sample of 50 awards. For each award we conducted desk research (award proposals, progress reports and final reports) and key informant interviews (KIIs) (the main award holder and one beneficiary) to explore the outcomes identified. This award-level data was used to evidence the contribution of the Newton Fund to the outcomes and to explore alternative mechanisms that may have led to the outcome. For each outcome, we produced a detailed description, with a supporting narrative on contribution and significance.

### **Step 5: Analysis and triangulation**

Award-level data was coded using MAXQDA software. We then analysed and interpreted the findings, going back to the original EQs and considering the prevalence of the outcome across awards, its significance, how strongly the outcome was associated with the Fund intervention, and what alternative mechanisms could explain the change.

Where feasible, we supplemented the award-level analysis with Fund-level scientometric data analysis from the Data Science module and evidence from the Impact module case studies to support our analysis. To inform the wider evaluation, we analysed the findings in the context of the ToC and explored the role of enabling and hindering factors in relation to the EQ.

## Step 6: Implications workshop to support the use of findings

Finally, we verified the findings and considered the implications through an evaluation-wide workshop, covering findings from different modules with DSIT. The purpose was to identify key learnings and implications for future funds, ensuring that the evaluation's insights were effectively applied. Following the workshop, we prepared an Outcomes module findings paper.

**Table 2. Evidence summary**

Documentation	Data science	Interviews
Newton Fund evaluation reports (Phases 1–4)	Reporting ODA (RODA) database (3,380 activities; filtered to 1,419 awards for sampling)	100 interviews planned for 50 awards (two per award: Principle Investigators (PIs) and beneficiary)
Newton Fund annual reports (e.g. 2018–19, 2020–21)	Researchfish data (approx. 900 awards linked via UKRI Gateway to Research – GtR; application programming interface – API)	Interviews coordinated to reduce burden across modules
The Independent Commission for Aid Impact (ICAI) Performance Review of the Newton Fund	Web of Science (WoS) for publication data	Stakeholders: PIs, Co-investigators (Co-Is), beneficiaries
Academic papers, e.g. Grimes and McNulty (2016), Reddy et al. (2018)	OpenAlex (global research metadata), Overton (grey literature and policy citations; >12 million documents indexed)	Interviews used to substantiate 15 selected outcomes across 50 awards
Award-level documents: proposals, progress reports, final reports	Derwent Innovation (patent data), GeoNames (for geographic disambiguation)	

# Findings

## Outcome-level narratives

In this section, we present the outcome-level analysis for each of the short-listed outcomes, as well as a “theme-level” overview of the findings.

**Table 3. Outcomes, description of the outcome and strength of evidence from data collected**

Outcome	Description	Strength of evidence
<b>Capacity strengthening</b>		
1.1 Promoted career progression through development of methodological and thematic expertise, and increased international profile	Research teams and individual researchers funded by the Newton Fund evidence have been able to progress their career through various international collaborative projects between the UK and partner countries, including Brazil, Thailand and Vietnam. These projects span different fields of research, including mental health research, liver fluke oncology and marine planning. In Brazil, researchers working on mental health benefited from advanced methodological training, collaborations with leading institutions such as King’s College London and the Centre for Affective Disorders, and participation in high-profile speaking engagements. In Vietnam, researchers gained access to foundational methodological training in choice modelling for biodiversity valuation, contributing to the professional development of early career researchers (ECRs). Through a UK–Thailand collaboration, researchers received comprehensive training in advanced scientific techniques, including nuclear magnetic resonance (NMR) analysis and targeted therapy, enhancing the methodological expertise and confidence of Thai researchers. Participation in these projects resulted in career promotions, strong academic outputs, and improvements in institutional processes for facilitating international research collaborations.	Strong
<b>Commercialisation</b>		
2.1 Development of new and/or improved products and services that are on track to being	Newton Fund awards have led to the development of a range of innovative products, technologies and services with high potential for commercialisation and market adoption. These include: the deployment of more than 500 low-cost sensors across glacier-fed basins, creating new datasets that now underpin Peru’s national flood early warning systems and inform water security policies and disaster planning; development of a biorefinery platform capable	Moderate/ Strong

<p>introduced into the market</p>	<p>of converting paper mill lignocellulosic waste into high-value chemicals, resulting in the first-ever engineering biology jet fuel-powered drone flight and attracting significant investment interest; development of an innovative platform for molecular diagnostics; the creation of low-cost high-precision microfluidic sensors detecting anti-microbial resistance (AMR) pollutants at parts-per-billion levels; and creation of a new solar-powered organic Rankine cycle (ORC) generator with advanced thermal storage, positioning this technology as a promising renewable energy solution. Evidence from across awards suggests that although there has been a range of advancements that demonstrate strong potential or existing entry into market application, most are still at pilot, proof-of-concept or early spinout stage.</p>	
<p>2.2 Increased commercialisation of innovative products, technologies and services through strengthened industry–academic links</p>	<p>Newton-funded industry–academic partnerships contributed to co-development of innovative products, technologies and services. One prominent example is the UK–India Waste-2-Wealth project, which developed a biorefinery platform capable of transforming paper mill lignocellulosic waste into high-value chemicals, demonstrating a high potential for commercial application. Similarly, a UK–China project effectively leveraged industry–academic collaborations by transferring advanced drug discovery technologies, including the XChem robotics and analytical platform, from the UK’s Diamond Light Source to the Shanghai Synchrotron, creating a new drug discovery facility and expanding technical capacity for automated fragment-based drug screening, thereby laying the groundwork for future commercialisation.</p>	<p>Moderate</p>
<p>3.1 Improved commercially relevant innovation capacity of universities</p>	<p>Across at least two Newton-funded collaborations, UK researchers partnered with institutions in Egypt and Malaysia to design and implement innovative projects that could contribute meaningfully to commercial innovation capacities within universities, promoting sustainable institutional growth and real-world application. One prominent example was a collaboration between Coventry University and Universiti Malaysia Sarawak around an educational innovation which involved developing gamifying teaching pedagogies. This eventually led to the establishment of a dedicated Gamification Centre and commercialisation of innovative educational tools, such as the science, technology, engineering and mathematics STEM Bucket. Similarly, another UK–Egypt partnership developed an advanced hybrid solar energy system, which eventually led to the establishment of the Solar Live Lab and an entrepreneurship unit dedicated to technology transfer and commercialisation, eventually increasing Egypt’s institutional innovation capacity.</p>	<p>Low/ Moderate</p>

<b>Influencing policy, practice and strategy</b>		
<p>4.1 Supported planning for emergency and disaster scenarios and environmental hazards through the design and development of innovative tools and processes</p>	<p>Across four Newton-funded collaborations, UK researchers partnered with institutions in Peru, the Philippines South Africa and Turkey and to design and deploy innovative tools and processes that strengthened national and local capacities to plan for and respond to environmental hazards and disaster scenarios. These projects advanced hazard and emergency preparedness through the co-development of flood forecasting platforms, volcanic risk atlases, climate adaptation tools and spatial resilience frameworks. In Peru, a network of more than 500 low-cost sensors, real-time data platforms and new open access datasets now underpin national flood early warning systems and basin-level planning. In South Africa, researchers developed the beta version of the National Flood Studies Application Tool (NaFSAT), alongside modernised design flood estimation methods and technical guidelines to support emergency planning. In Turkey, the project produced volcanic hazard atlases and 30 scenario-based assessments that have been formally adopted into national risk planning systems. In the Philippines, a Newton-funded PhD developed spatial resilience indicators and decision-support tools tailored for disaster preparedness in small island communities, which are now informing local development and recovery planning. Together, these tools and resources support evidence-based, contextually relevant planning for climate and disaster risks, while also developing and embedding long-term capacity within national and local emergency and disaster systems through training, partnerships and local and national stakeholder engagement.</p>	<p>Strong</p>
<p>4.2 Informed farming practices to support national and international agricultural and food policies</p>	<p>Two Newton-funded collaborations, one in Colombia and another in China, have supported more informed agricultural and food policies through the development of evidence, tools and networks that linked farming practices with public health and environmental sustainability. In Colombia, a UK–Colombian consortium evaluated biodiversity-rich silvopastoral systems (SPS), generating field-based evidence on their productivity and environmental benefits. These findings were shared with national and regional policymakers through bilingual policy briefs and contributed to ongoing discussions on sustainable agriculture and land use strategies. In China, a UK–China research partnership investigated the spread of AMR, focusing on colistin use in animal production and its implications for human and animal health. The project identified patterns of mobile resistance mechanisms such</p>	<p>Moderate</p>

	as MCR-1, with relevance for both agricultural practice and public health regulation.	
4.3 Informed decision making of research funding bodies on interdisciplinary research programmes	Newton funding has demonstrated the value of interdisciplinary research in addressing complex societal and environmental challenges, while also informing how funding bodies can design, support and scale such programmes. A Newton-funded UK–Brazil consortium integrated expertise from genetics, archaeology, palaeoecology and botany to investigate plant domestication and biodiversity in Amazonia. This interdisciplinary approach enabled researchers to address complex research questions and generate novel methodologies which ultimately shaped Brazilian policy on biodiversity and climate adaptation. In Jordan, Newton supported the Royal Scientific Society (RSS) to reintroduce social sciences into its institutional portfolio, enabling new interdisciplinary work on issues such as climate change, refugee health and sustainable development. The project generated evidence to inform funding strategies on how interdisciplinary collaboration can be effectively structured, resourced and sustained to address pressing societal challenges and priorities.	Low/ Moderate
4.4 Design and development of medical diagnostic technologies targeting local health needs	Newton-funded collaborations in the Philippines and Kenya supported the design and introduction of locally appropriate diagnostic and preventive health technologies tailored to local health needs. In the Philippines, Newton-funded researchers developed an affordable molecular diagnostic test for dengue fever using locally sourced reagents, such as polymerase enzymes, thereby reducing dependence on imported kits. The device allowed for accurate differentiation of dengue fever from other infections with minimal capital investment, addressing a significant public health need in a country that records over 200,000 dengue cases annually. In Kenya, a Newton-funded UK–Kenya partnership co-developed and piloted community-based health kiosks for non-communicable disease (NCD) prevention. The kiosks, integrated into Vihiga County’s primary healthcare system and staffed by community health promoters, provided blood pressure and glucose screening to more than 2,200 individuals and demonstrated strong community uptake. Supporting outputs, including training materials and consensus-building procedures, facilitated local uptake, strengthening local infrastructure and capacity for preventive health services.	Low
<b>Partnership building</b>		

<p>5.1 Establishment of formal and institutionalised links between UK and partner country academic communities, leading to sustainable funding and new areas of research</p>	<p>Two Newton-funded UK–China collaborations contributed to the establishment of formal, long-term academic partnerships and generated concrete outputs that have continued to shape research, practice and policy in their respective fields. The first project, focused on AMR, produced a publicly accessible biobank of bacterial samples from human and animal populations across three Chinese provinces. This resource has become a platform for ongoing surveillance and research into resistance mechanisms, particularly mobile colistin resistance (MCR-1). The project also contributed to the wider evidence base which influenced policy change in China, including the ban on colistin as a growth promoter in animal feed. The second project advanced interdisciplinary research on rural heritage and identity by co-producing new knowledge and cultural outputs with UK and Chinese academic and non-academic partners. The partnership produced bilingual podcasts, collaborative workshop outputs and cultural artefacts that documented evolving grassroots heritage practices in rural China. The project deepened mutual understanding of rural heritage and craft, supported ECR engagement, and strengthened collaboration between institutions such as University College London, the V&amp;A at Design Society, and the Chinese National Museum of Ethnology.</p>	<p>Low</p>
<p>5.2 Improved perception of UK as a global leader in R&amp;I among partner countries</p>	<p>Across the awards analysed for this module, only one award provided evidence on improved perception of the UK as a global leader in R&amp;I among partner countries. This does not necessarily indicate that this outcome was not realised in the Fund; it may instead reflect characteristics of the award sample or the evidence collected for the awards analysed. Therefore, we are not able to write an outcome-level assessment, and instead we present the award narrative below.</p>	<p>-</p>
<p>5.3 Created opportunities in partner countries on topics of key importance to the UK</p>	<p>Two Newton-funded collaborations, one in Colombia and another in Malaysia, created R&amp;I opportunities in areas of strategic importance to the UK, including sustainable food systems, environmental health and biodiversity in agriculture. In Malaysia, a Newton-funded UK–Malaysia research partnership developed a biodegradable food packaging system using previously unused agri-waste and bioactive films derived from herbs. This innovation extended the shelf life of food products and reduced the need for synthetic preservatives and plastic packaging, with potential benefits for both environmental sustainability and foodborne illness prevention. The project advanced from laboratory development to pilot production and early-stage industry engagement, creating the conditions for commercial uptake. In</p>	<p>Low</p>

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	<p>Colombia, a UK–Colombian consortium evaluated the impact of SPS on biodiversity and agricultural productivity, producing field-based evidence that informed a bilingual policy brief. The project contributed to policy discussions on sustainable farming and land use practices, offering data and insights that could inform both Colombian and UK efforts to promote environmentally responsible agriculture.</p>	
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# Annex 2: Impact module

This annex provides an overview of the Impact module. It begins by introducing the Impact module design and methodology, followed by an outline of the impact pathway for the Newton Fund evaluation, which serves as the framework for both design and methodology. Finally, a summary of each context-intervention-mechanism-outcome (CIMO) configuration is provided, including the respective resources provided by the Newton Fund, contexts, intervention factors, mechanisms, and outcomes.

## Introduction

The Impact module examined how, why and in what contexts the Fund has contributed to longer-term outcomes and impact. The module addresses four key EQs:

- What long-term outcomes (intended and unintended) has the Newton Fund contributed to?
- How far is the Newton Fund on track and likely to contribute to the intended impacts, as set out in the ToC?
- How far has the Newton Fund contributed to R&I systems in the UK and partner countries?
- What factors have supported or hindered the Newton Fund from contributing to long-term outcomes and impacts?

## Evaluation design and methodology

### Methodology

The evaluation draws on a combination of contribution analysis and realist evaluation to examine the Newton Fund's contribution to longer-term outcomes and the conditions that have shaped its influence. This approach is grounded in the recognition that R&I funding operates in complex environments, where change is non-linear, shaped by context, and influenced by multiple actors and systems.

Contribution analysis provides a structured framework to assess the extent to which observed outcomes can reasonably be linked to Newton Fund support. It does so by testing the plausibility of the Fund's contribution along defined impact pathways, tracing results from selected awards through to sector-level and system-level change. This approach is particularly appropriate for initiatives like the Newton Fund, where the nature of the intervention makes experimental or counterfactual designs unsuitable, and where multiple contextual factors interact to influence outcomes.

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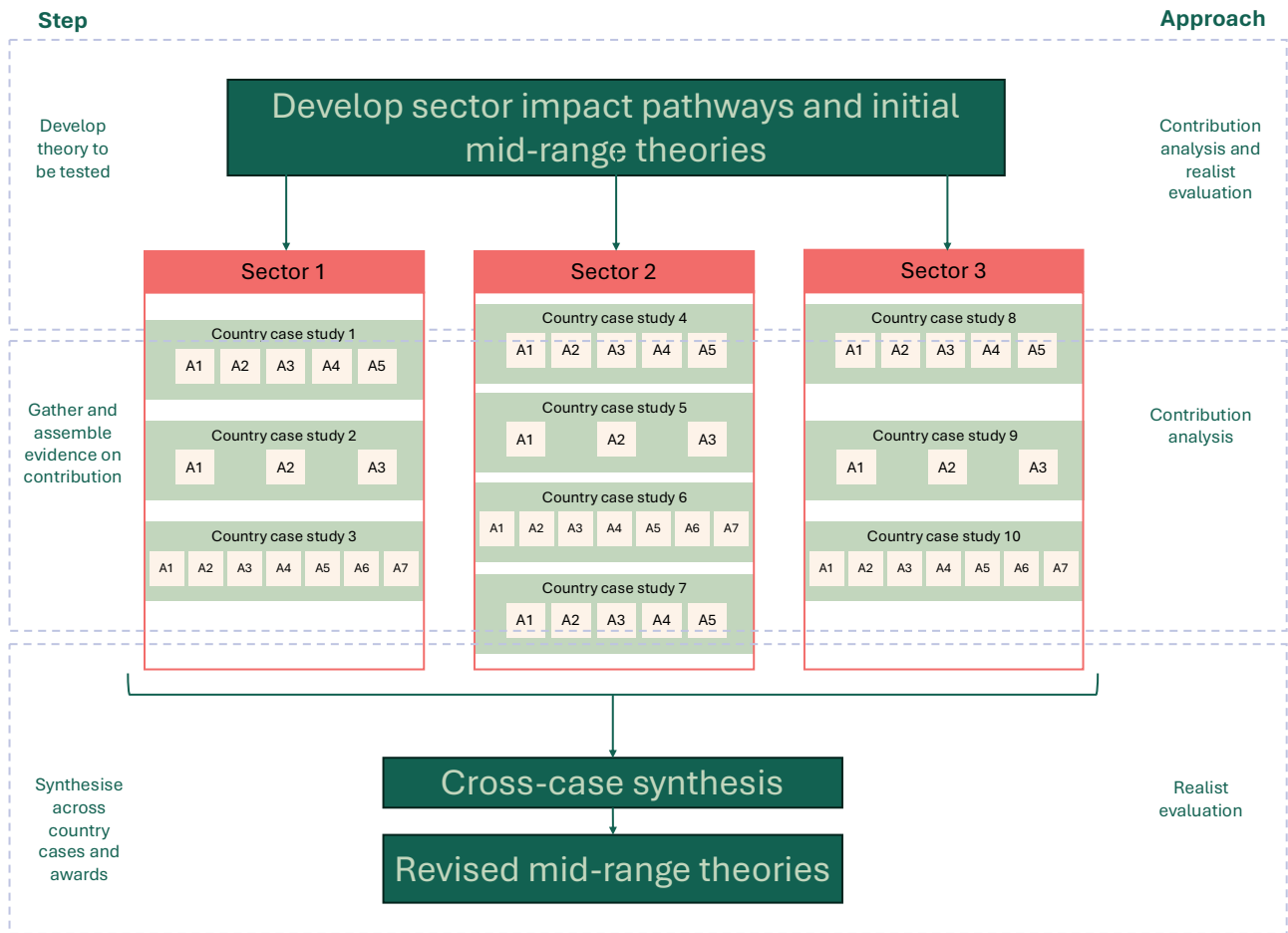
Realist evaluation complements this by exploring the mechanisms that have enabled or constrained change, and the contextual features that shaped how the Fund's interventions worked in practice. By asking "what worked, for whom, in what circumstances, and why?", realist thinking supports a deeper understanding of the processes that underpin contribution. Within the case studies, a light-touch realist lens has been used to identify patterns in how Newton Fund awards have supported – or struggled to support – longer-term results, including through features such as institutional partnerships, local research capacity, and stakeholder engagement.

The evaluation is grounded in 10 country case studies, each focused on a single sector of Newton Fund investment. Within each country, a small sample of awards (typically between three and seven) has been selected to enable a detailed exploration of pathways to change. The sectoral focus allows for in-depth analysis at country level, while also supporting cross-country comparison across high-investment areas. This case study approach enables both vertical analysis of change within specific systems and horizontal learning across contexts.

## Design

The evaluation design (see Figure 2) was structured around three interconnected stages: developing theory, testing theory, and refining theory. This approach enabled a systematic investigation of the Newton Fund's contribution to longer-term outcomes and emerging impact across 10 partner countries.

**Figure 2. Impact evaluation approach**



In the **first stage**, the team identified three sectors of focus based on the scale of Newton Fund investment and their relevance to future UK R&I priorities. Countries were grouped according to these sectors, and within each, a purposive sample of awards was selected to enable in-depth analysis. Sector-specific impact pathways were then developed to articulate the expected trajectory of change from Newton Fund interventions. These were informed by a review of secondary documentation and past evaluation findings. Initial mid-range theories were also developed to provide a framework for understanding how and under what conditions change was expected to occur.

The **second stage** involved testing these theories through 10 country case studies. Each country team conducted a context analysis, reviewed secondary evidence across selected awards, and carried out primary data collection through KIIs with award holders, ECRs, external stakeholders and national actors. This data was used to construct structured contribution stories for each country, assessing how far the Newton Fund had contributed to longer-term change and the extent of progress towards impact, including the mechanisms and contextual factors at play.

In the **final stage**, a cross-case synthesis was undertaken to identify patterns across countries and sectors. This enabled the refinement of the original mid-range theories,

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drawing on realist analysis techniques to deepen understanding of what worked, for whom, and in what contexts. The refined theories offered transferable insights to inform future ODA R&I funding, including the design and management of similar large-scale research partnerships.

## Impact pathway for Newton Fund evaluation

As part of the evaluation, a Fund-level impact pathway was developed. This framework is underpinned by a series of explanatory theories, expressed as CIMO configurations. These CIMOs set out plausible explanations for how Newton Fund investments generate change, and they were tested and refined through award-level and country-level analysis. Four CIMOs related to long-term outcomes were developed, aligned to three overarching impact pathways, which are shown in Figure 3, Figure 4 and Figure 5:

- Pathway 1: Research Capacity Strengthening
- Pathway 2: General Environment Protection
- Pathway 3: Medical Research and Innovation.

The CIMOs address areas such as institutional capacity strengthening, researcher career progression, South–South and North–South collaborations, policy uptake, innovation systems, and commercialisation of research outputs.

How and why these patterns may have occurred was assessed by drawing on realist evaluation principles, identifying plausible causal explanations in the form of CIMO configurations. These programme theories helped unpack how particular Newton Fund interventions contributed to observed outcomes, what mechanisms were triggered, and under what contextual conditions. For each pathway, a set of CIMOs was tested and refined through the evaluation, using data from award documentations, stakeholder interviews and country context analyses.

To assess the strength and credibility of the unpacked CIMO configurations across the Newton Fund evaluation portfolio, a structured qualitative synthesis scale was applied. The purpose was to transparently communicate the level of support for each finding, based on the breadth and depth of evidence across awards and countries. Given the qualitative and theory-based nature of the evaluation, “strength” reflects not just frequency but also triangulation across data types and geographies.

Figure 3. Impact pathway for research capacity strengthening

REVISED SECTOR IMPACT PATHWAY: RESEARCH CAPACITY STRENGTHENING

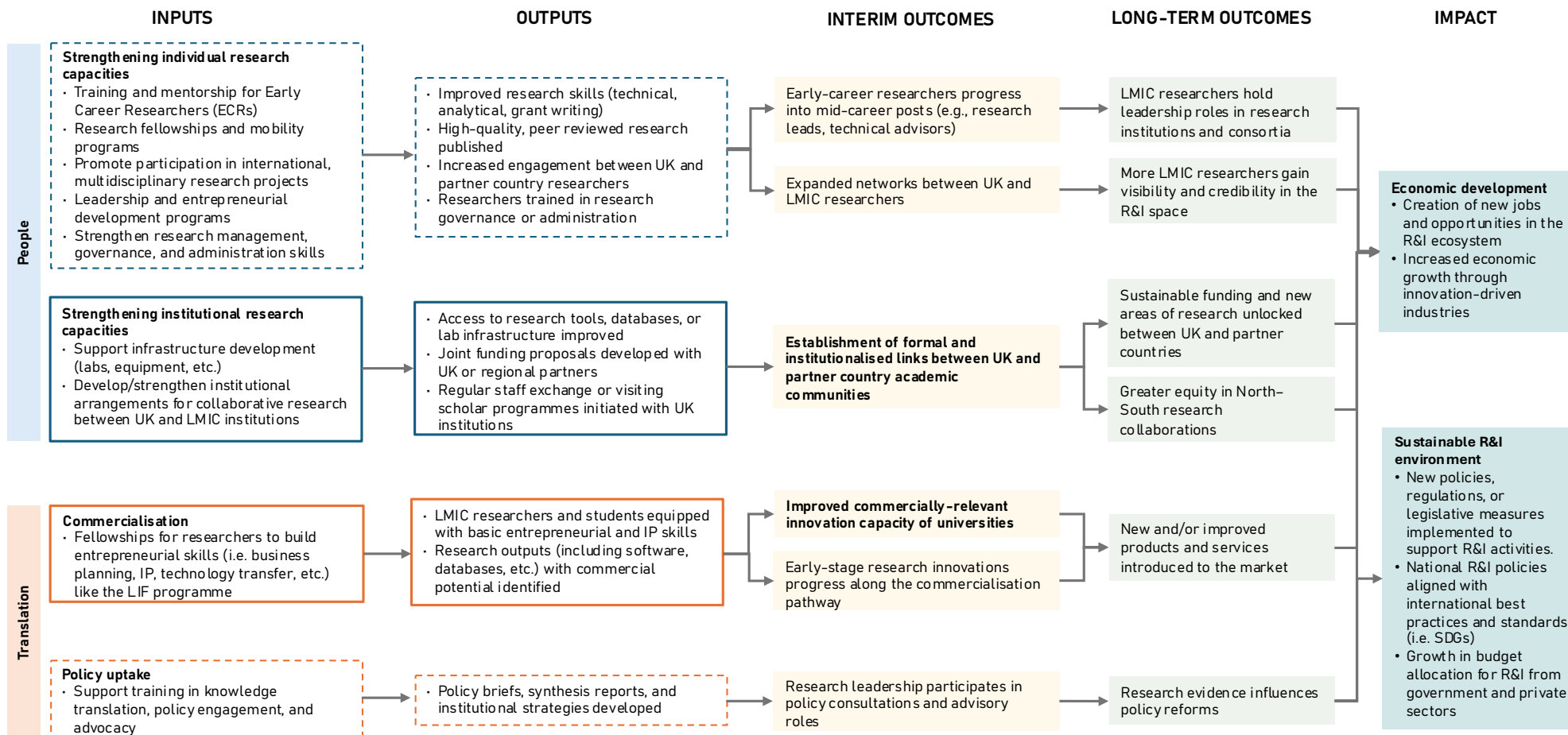


Figure 4. Impact pathway for general environment protection

REVISED SECTOR IMPACT PATHWAY: GENERAL ENVIRONMENT PROTECTION

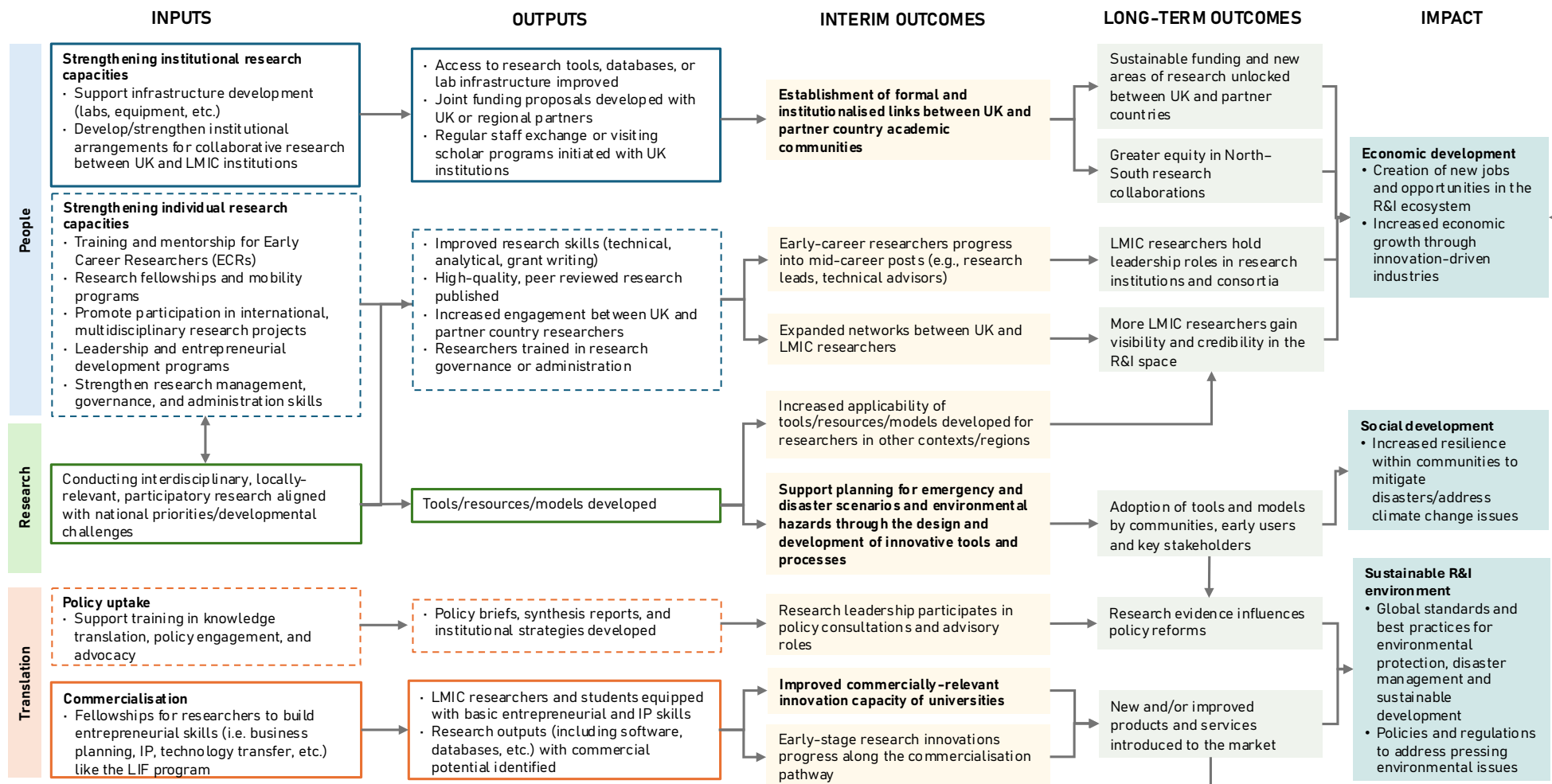
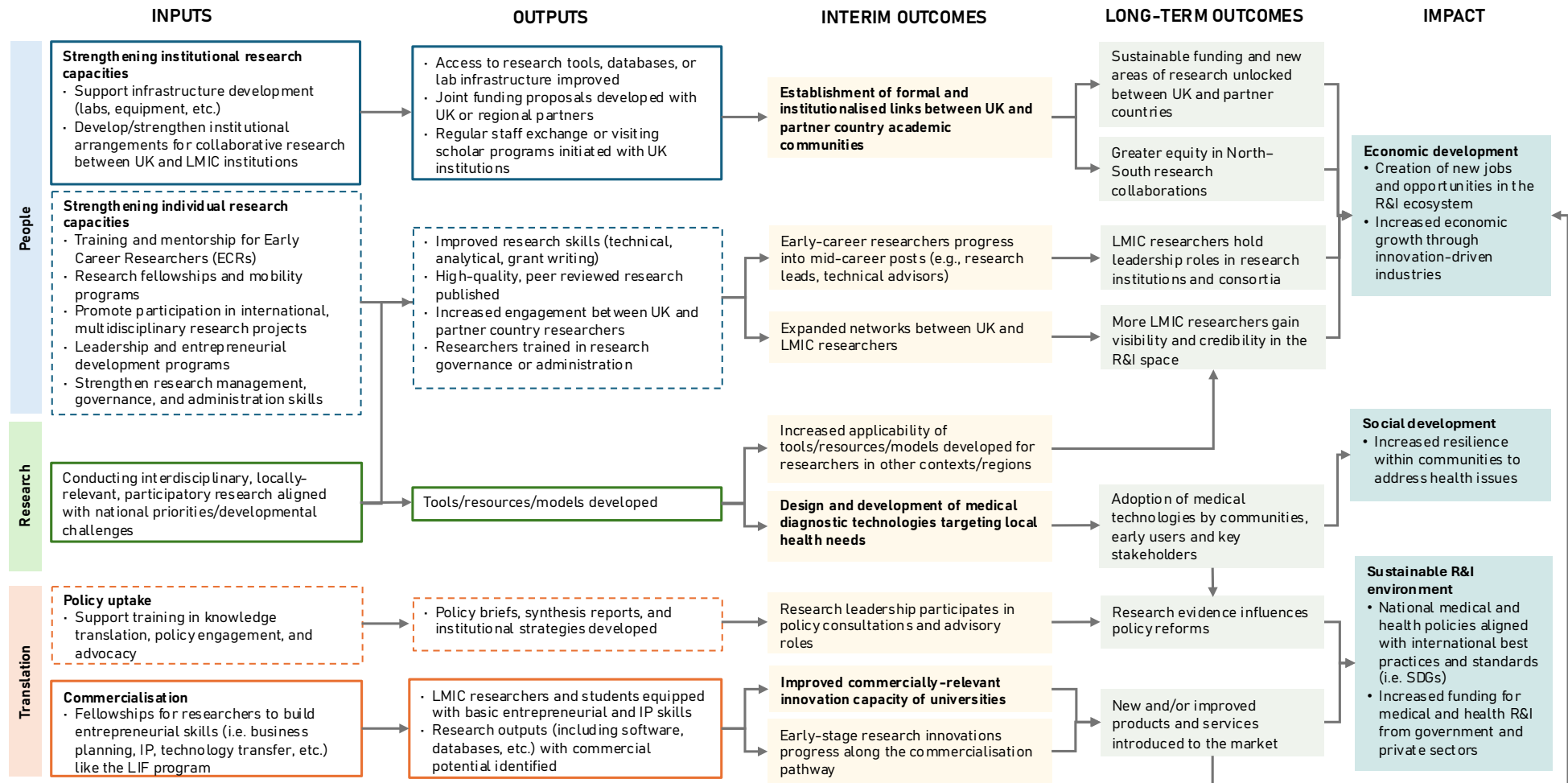


Figure 5. Impact pathway for Medical R&I

REVISED SECTOR IMPACT PATHWAY: HEALTH, GENERAL (MEDICAL R&I)



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## Summary of the CIMOs

In this section, each CIMO is presented in a summary table, with the following columns for data source:

- Number of awards indicates the number of awards in which the finding was observed.
- Findings indicate the number of countries in which the finding was observed, based on both country context analyses and award documentation.
- Country case studies identifies the countries where supporting evidence was found listing them using the following codes:
  - BR: Brazil
  - CN: China
  - EG: Egypt
  - IN: India
  - KE: Kenya
  - MY: Malaysia
  - ZA: South Africa
  - TH: Thailand
  - TR: Turkey
  - VN: Vietnam

## Long-term outcome 1: Strengthened institutional systems and enabling environments that support high-quality research in MICs

CIMO 1: In contexts where MIC research institutions face fragmented systems for research governance, infrastructure, and quality assurance, providing targeted institutional support – through infrastructure investments, institutional review mechanisms, and capacity building for research management staff – enables staff to adopt clearer processes, improves coordination and oversight, and builds institutional confidence to manage and sustain research activities, leading to stronger systems and environments that support high-quality research.

CIMO Area	Data sources		
	Number of awards	Findings	Country case studies
<b>Resources provided by the Newton Fund</b>			
Providing support to MIC institutions to strengthen research systems and environments – including infrastructure, governance, and management capabilities...			
<b>Context</b>			
...in a context where MIC research institutions are actively seeking to strengthen their research systems and strategies to meet national and global development challenges...	48	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and/or where there is growing institutional commitment to improving research governance, quality assurance and accountability...	39	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and/or where research managers and administrators are increasingly recognised as key enablers of research quality and sustainability...	39	9	BR, CN, EG, IN, KE, MY, TH, TR, VN
...and/or where institutions are investing in aligning internal systems with international research standards to enhance competitiveness and credibility...	47	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
<b>Intervention factor</b>			
...providing targeted infrastructure investments (e.g. labs, data systems, repositories) to support the development of institutional research capacity...	25	8	BR, CN, EG, IN, KE, TH, TR, ZA

...and institutional reviews and system diagnostics are facilitated to inform improvements in research governance, strategy and management...	12	7	BR, EG, IN, KE, TH, TR, ZA
...and capacity building is provided for research management staff – including training, workshops and practical tools – to strengthen internal systems for research coordination, ethics, quality assurance and monitoring...	31	8	BR, CN, EG, IN, KE, TH, TR, ZA
<b>Mechanism</b>			
...builds a stronger sense of ownership, legitimacy and internal accountability for delivering high-quality research...	36	7	BR, CN, IN, EG, KE, MY, ZA
...and empowers research management staff with the skills and confidence to support researchers more effectively and navigate compliance and reporting requirements...	15	9	BR, CN, IN, EG, KE, MY, TH, TR, ZA
...and strengthens the credibility of MIC institutions by embedding robust systems for research governance, ethics and quality assurance ...	12	9	BR, CN, IN, EG, KE, MY, TH, TR, ZA
<b>Outcome</b>			
...resulting in strengthened institutional systems and enabling environments that support high-quality research...	32	9	BR, CN, EG, IN, KE, MY, TH, TR, ZA
...and improved institutional ability to shape research agendas, manage large-scale collaborations and respond to development priorities...	28	8	BR, CN, IN, KE, MY, EG, TH, TR
...and greater institutional resilience and independence in sustaining research excellence over time.	19	8	BR, CN, EG, IN, MY, TH, TR, ZA

## Long-term outcome 2: Progression of researchers into mid-career roles and increased leadership of MIC researchers in national institutions and international consortia

CIMO 2: Providing targeted training, mentorship, leadership of research workstreams, and authorship opportunities to ECRs in MICs – who often face limited recognition and constrained pathways to advancement – builds their skills, enhances visibility and credibility, and fosters confidence and recognition of leadership potential, leading to progression into mid-career roles and, over time, increased leadership of MIC researchers in national institutions and international consortia.

CIMO Area	Sources		
	Number of awards	Findings	Countries case studies
<b>Resources provided by the Newton Fund</b>			
Providing targeted support to ECRs in MIC institutions through mobility grants, fellowships, training workshops, mentorship, and leadership opportunities			
<b>Context</b>			
...in a context where ECRs in MICs are actively seeking international exposure, credible publication opportunities, and career progression pathways...	44	9	BR, CN, EG, IN, MY, TH, TR, VN, ZA
...and/or where institutional structures allow or encourage participation in global research networks...	48	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...but local opportunities for high-quality mentorship, leadership roles and authorship remain limited...	12	3	BR, EG, ZA
<b>Intervention factor</b>			
...facilitating international mobility and exposure through fellowships and travel grants, enabling ECRs to engage with cutting-edge research environments, gain global experience and build transnational networks...	22	7	BR, CN, EG, IN, MY, TH, ZA
...and providing access to peer exchange, thematic learning and skills development through collaborative workshops and training programmes that support knowledge exchange, foster cross-institutional dialogue and build research-relevant soft and technical skills...	52	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA

...and embedding mentorship and supervision structures within fellowships and collaborative research projects, creating opportunities for ECRs to receive sustained guidance, constructive feedback and strategic career support from senior researchers and institutional partners...	49	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and creating opportunities for leadership and visibility by supporting ECRs to co-lead research workstreams, coordinate project activities and co-author high-quality outputs...	44	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
<b>Mechanism</b>			
...builds a sense of professional confidence and legitimacy among ECRs, who feel better equipped to navigate academic systems, contribute meaningfully to research agendas and assert their leadership within institutional and international settings...	45	8	BR, CN, EG, IN, KE, MY, TH, ZA
...and cultivates a sense of belonging and recognition as ECRs gain visibility through authorship, collaboration, and engagement with senior researchers...	33	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
<b>Outcome</b>			
...resulting in increased retention and progression of ECRs within MIC institutions, with many moving into mid-career roles and assuming greater leadership responsibilities in research projects, consortia and institutional initiatives...	35	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...as well as stronger representation of MIC researchers in authorship, agenda-setting, and research management roles, contributing to more equitable and locally relevant research collaborations...	37	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and deeper integration of MIC researchers into international research networks and systems, enhancing institutional visibility and credibility and supporting long-term shifts toward locally anchored, globally engaged research leadership.	46	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA

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### Long-term outcome 3: Sustained, high-quality South–South partnerships that enhance regional and global leadership, unlock new funding opportunities, and advance collaborative research on development challenges

CIMO 3: Facilitating collaborations among research institutions in MICs – particularly where institutions share regional priorities but have historically lacked coordination – supports the development of mutual trust, shared research culture and aligned goals; as institutions experience increased confidence and capacity for joint planning, this leads to strengthened intraregional partnerships, sustained funding, and the unlocking of new areas of research. Providing support to MIC institutions to initiate and strengthen regionally led, strategically aligned collaborations.

CIMO Area	Sources		
	Number of awards	Findings	Countries case studies
<b>Resources provided by the Newton Fund</b>			
Providing support to MIC institutions to initiate and strengthen regionally led, strategically aligned collaborations...			
<b>Context</b>			
...and/or where partner country institutions face shared development priorities or transboundary challenges that benefit from joint responses...	12	5	BR, CN, MY, TH, ZA
...and/or where regional collaboration is supported through shared governance mechanisms and co-owned research agendas, and is seen as a pathway to enhanced credibility, leadership, and ownership of research within and across MICs...	12	4	CN, MY, TH, ZA
<b>Intervention factor</b>			
...where linkages are facilitated between research institutions in MICs through regional mobility schemes, joint research initiatives, and thematic networking events...	17	6	BR, CN, KE, MY, TH, ZA
...and where support is provided to co-develop regionally aligned research agendas and shared governance mechanisms for collaborative planning and implementation...	20	6	BR, CN, KE, MY, TH, ZA
<b>Mechanism</b>			

...fosters a sense of mutual trust among partners with shared values and priorities...	14	7	BR, CN, IN, KE, MY, TH, ZA
...and a sense of confidence among staff who have improved administrative, coordination and technical capacity to support regional projects...	10	6	BR, CN, KE, MY, TH, ZA
...and an increased willingness to innovate, or a belief that among institutions that have experienced the benefits of co-creation, diverse expertise, and resource pooling...	14	6	BR, CN, IN, KE, MY, TH, ZA
<b>Outcome</b>			
...resulting in stronger intraregional research links and more effective collaboration on regionally relevant issues...	14	8	BR, CN, EG, IN, KE, MY, TH, ZA
...as well as new funding being unlocked through coordinated proposals or pooled resources...	5	7	BR, CN, EG, KE, MY, TH, ZA
...and new or underexplored research themes aligned with regional development priorities.	5	6	BR, CN, EG, KE, MY, ZA

## Long-term outcome 4: Sustained, high-quality UK–MIC partnerships that enhance regional and global leadership, unlock new funding opportunities, and advance collaborative research on development challenges

CIMO 4: In contexts where MIC research institutions have limited bargaining power and recognition in global research agendas, providing support to establish co-funded, strategically aligned collaborations with UK institutions enables more balanced ownership, strengthens internal systems and mutual accountability, and fosters trust – leading to sustained UK–MIC collaboration and expanded opportunities for joint funding and agenda-setting.

CIMO Area	Sources		
	Number of awards	Findings	Countries case studies
<b>Resources provided by the Newton Fund</b>			
Providing support to MIC institutions to establish co-funded, strategically aligned partnerships with UK institutions...			
<b>Context</b>			
...where MIC research institutions are increasingly committed to equitable international collaborations, investing personnel, time and strategic resources to build and sustain long-term partnerships with UK counterparts...	31	9	BR, CN, EG, IN, KE, MY, TH, VN, ZA
...and/or where national science and innovation policies in MICs actively promote regionally relevant, Sustainable Development Goals (SDG)-aligned research collaborations...	36	6	BR, CN, EG, IN, MY, TR
...and/or where research actors on both sides share overlapping priorities and see value in co-developing solutions to development challenges...	38	6	BR, CN, EG, IN, MY, TR
<b>Intervention factor</b>			
...where linkages are established or strengthened between MIC and UK research institutions through staff exchanges, joint research projects and collaborative grant programmes (e.g. Newton Institutional Links, joint centres, regional collaborations) ...	44	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and where support is provided for matchmaking workshops and proposal development events to enable partner identification and joint agenda-setting...	12	7	BR, CN, EG, IN, KE, TH, ZA

...and where shared governance structures and co-funding arrangements promote joint leadership, equitable roles, and sustainability in collaborative research efforts...	38	10	BR, CN, EG, IN, KE, MY, TH, TR, VN, ZA
...and where thematic funding calls incentivise alignment with shared development priorities and foster interdisciplinary research...	26	7	BR, CN, EG, IN, KE, MY, TR
<b>Mechanism</b>			
...fosters a sense of mutual trust and confidence through repeated, jointly managed engagement...	48	9	BR, CN, EG, IN, KE, MY, TR, VN, ZA
...along with a perception of legitimacy and fairness in the partnership, as co-leadership and shared decision making make MIC institutions feel like equal contributors...	43	9	BR, CN, EG, IN, KE, MY, TR, VN, ZA
...and builds institutional motivation, because collaborative research is increasingly seen as necessary to addressing developmental challenges...	31	9	BR, CN, EG, IN, KE, MY, TR, VN, ZA
<b>Outcome</b>			
...resulting in long-term, resilient UK–MIC research partnerships that extend beyond individual project cycles and are sustained through institutional commitment and co-investment...	26	8	BR, CN, EG, IN, KE, MY, TH, ZA
...and leading to the pursuit of new or previously underexplored research themes – especially those aligned with local priorities – with stronger institutional support and increased access to funding opportunities.	44	7	BR, CN, EG, KE, TR, VN, ZA

# Annex 3: Value for Money module

## Introduction

The purpose of the Value for Money (VfM) assessment in this evaluation was to provide a summative view of the Newton Fund. We aimed to add to the existing evidence base by assessing awards included in the evaluation's Outcomes module.

### Box 1: Defining VfM<sup>2</sup>

VfM poses an evaluative question about how well resources are used and whether they are being used well enough.

'Good VfM' is an evaluative judgement based on whether the programme creates more value than it consumes and/or whether sufficient outcomes or impacts are achieved to justify the investment of resources.

#### VfM principles

VfM is an evaluative question requiring a judgement. We use a transparent, evidence-based process to make judgements. Well-informed judgements draw on a range of evidence sources. Fund-specific definitions and criteria for the 4Es (economy, efficiency, effectiveness and cost-effectiveness, with equity cross-cutting) are needed. The process aligns with relevant monitoring and evaluation (M&E) frameworks.

The assessment is done in consultation with POs.

## Approach and methodology

The VfM assessment was implemented through a two-pronged approach at the award and country levels and drew from evidence from the Impact and Outcomes modules:

- Award level: We used a rubric to assess a sample of 50 awards against the 4Es (economy, efficiency, effectiveness with equity cross-cutting), and each award was assessed along 12 criteria ('sub-dimensions'), which are each rated along defined standards of performance (i.e. poor, adequate, good, excellent).<sup>3</sup>
- 

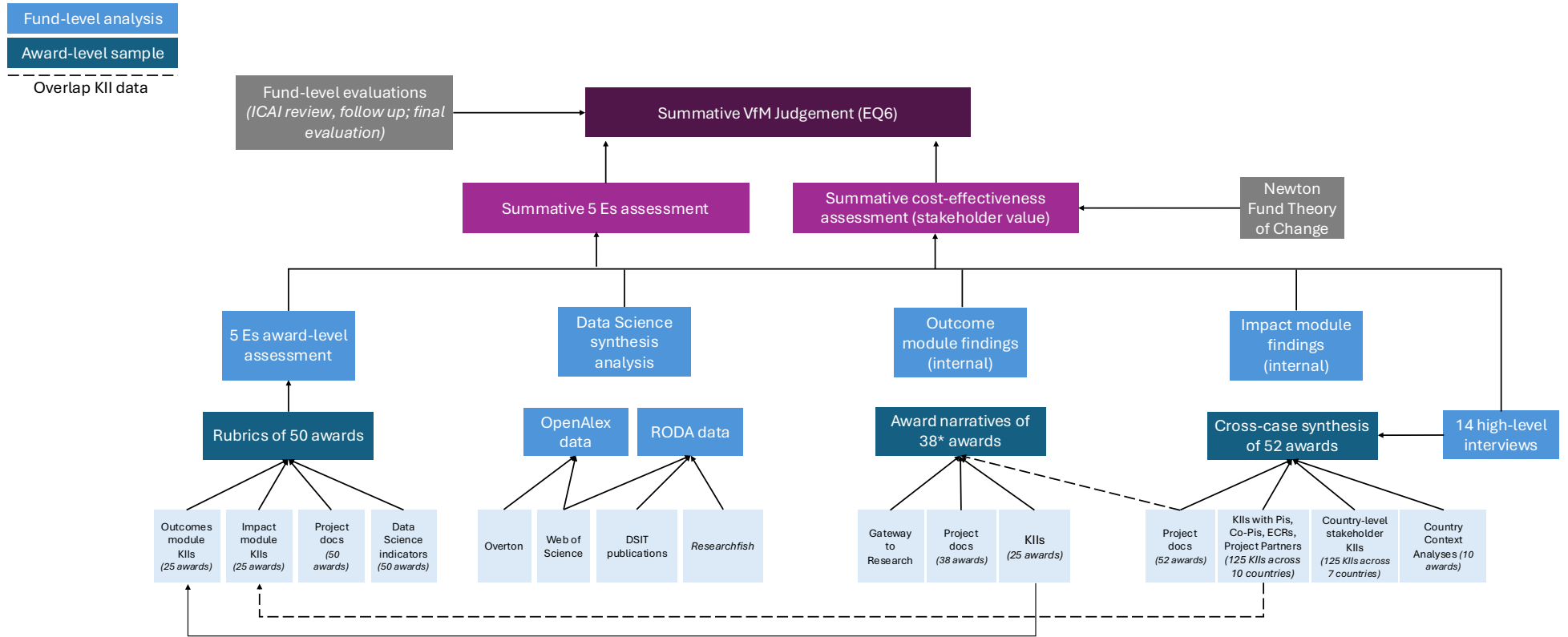
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<sup>2</sup> Adapted from King and OPM (2018) The OPM approach to assessing value for money: A guide. Oxford: Oxford Policy Management Ltd.

<https://www.opml.co.uk/files/Publications/opm-approach-assessing-value-for-money.pdf?noredirect=1>

<sup>3</sup> This is consistent with the VfM approach already used by DSIT and FCDO.

**Figure 6 VfM module data inputs**

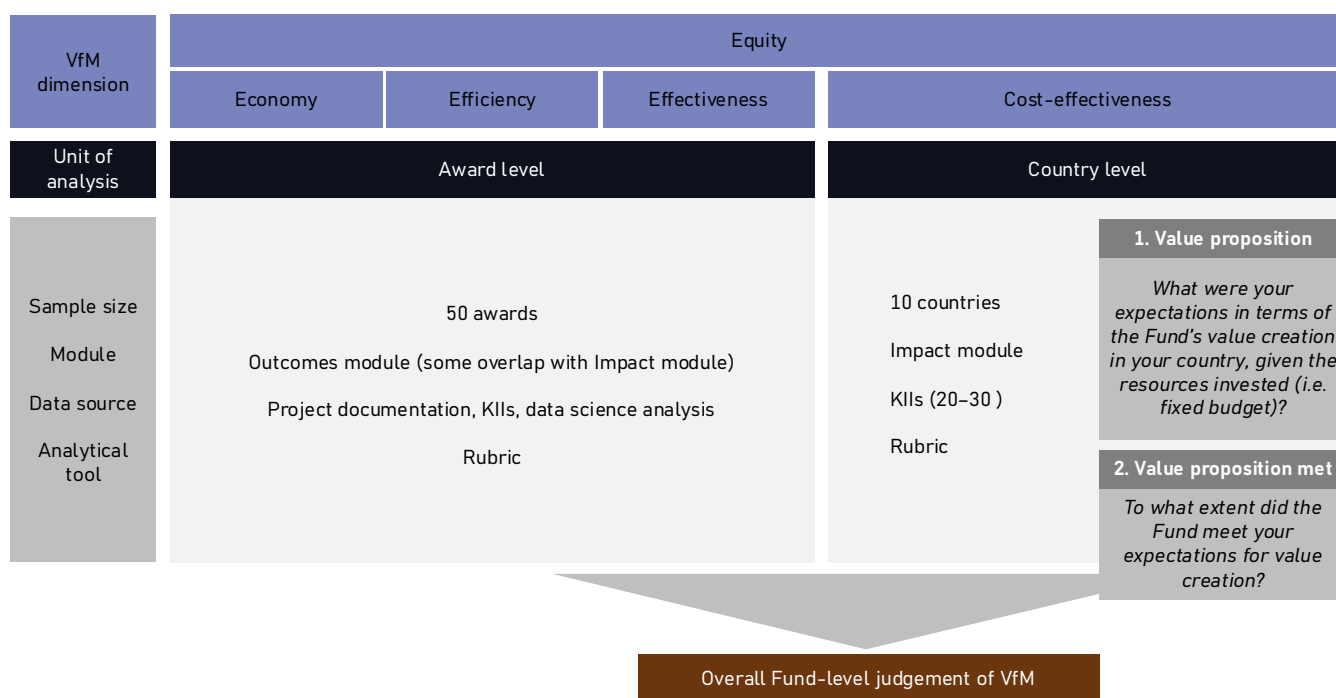


\*Overlap of 13 impact awards

- Country: Where possible, we incorporated country-level evidence to supplement analysis for cost-effectiveness. This was assessed by a stakeholder value assessment in the 10 Newton Fund countries that were reviewed as part of the Impact module. Stakeholders were asked about (1) what their expectations were in relation to the value creation with the given resources, and (2) the extent to which these expectations were met. The Fund’s activities in the given country will exhibit cost-effectiveness if they are found to have created enough value to justify the resources invested.

The precise means of undertaking these analyses is further elaborated on below. A visual summarising this approach to VfM is shown in Figure 7.

**Figure 7. Approach to operationalising VfM**



## Award level

**Each award was assessed along 12 criteria (‘sub-dimensions’) (see Table 4), which were each rated along defined standards of performance (i.e. poor, adequate, good, excellent) (see Table 5). A strength of evidence rating per award reviewed was also provided by the reviewer.<sup>4</sup>**

The rubric has a particular focus on the Effectiveness and Equity dimensions, given that this evaluation follows three previous evaluations of the Newton Fund, is retrospective (i.e. delivered after the close of the Fund), and concentrates on longer-term outcomes and impact. The analysis was then aggregated for the full sample of 50 awards to make summative judgements about performance against the 4 Es.

<sup>4</sup> The approach to assessing confidence in evidence was standardised across the entire evaluation.

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The award-level rubric also has one sub-dimension on cost-effectiveness: 'likelihood of contributing to longer-term outcomes and Fund-level impact'. This sub-dimension is included because the contribution of awards to longer-term outcomes and impact is an important element of value creation under cost-effectiveness; however, it is in and of itself insufficient as a metric. The findings against this sub-dimension were therefore supplemented by the country-level analysis of cost-effectiveness, outlined below.

The evidence for the award-level assessment came from project documentation reviewed and KIIs undertaken by the Outcomes module<sup>5</sup> and quantitative data from the Data Science module. Where there is overlap in the award-level sample between the Outcomes and Impact modules, we also drew on data from the Impact module (see Figure 6).

## Country level

We supplemented the award-level analysis with some targeted use of country-level data to give a picture of cost-effectiveness. The 5th E, cost-effectiveness – the value created relative to the resources invested – was primarily assessed by a stakeholder value assessment in the 10 Newton Fund countries that were reviewed as part of the Impact module<sup>6</sup>. The Impact module interviewed country stakeholders from the key informant list who were able to comment on the nature of the Newton Fund partnership more broadly in each given country.<sup>7</sup>

As such, the VfM module capitalised on the Impact module's contextual analysis and KIIs to streamline stakeholder engagement and secure a range of perspectives on value derived for the investments made. The cost-effectiveness assessment asked key informants about (1) what their expectations were in relation to the value creation with the given resources, and (2) the extent to which these expectations were met. The Fund's activities in the given country exhibit cost-effectiveness if they were found to have created enough value to justify the resources invested (see 'Country-level cost-effectiveness tool' for more details).

## Synthesis

An overall evaluative judgement on the VfM of the Fund was made based on the evidence stemming from the analysis of 50 awards and the cost-effectiveness assessment in the 10 countries.

## Overview of the rubrics

Table 5 describes the general performance standards against which each award was scrutinised per sub-dimension, and lays out the detailed rubric that was applied for the analysis of each award, which includes the specific sub-dimensions that have been defined for the 5Es (Economy, Efficiency, Effectiveness, Cost-Effectiveness, with Equity cross-cutting).

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<sup>5</sup> The VfM module contributed questions related to VfM to the KII guides used by the Outcomes module.

<sup>6</sup> Brazil, China, Egypt, India, Kenya, Malaysia, South Africa, Thailand, Turkey and Vietnam.

<sup>7</sup> The precise methodology for the country context analysis is yet to be finalised. VfM-related objectives will be integrated into the methodology during its development.



**Table 4. Award-level rubrics**

<b>1. Investments in foundations for development impact: Economy</b>	
1.1 Investing in Newton Fund foundations with good procurement and cost management	Investing in the foundations for the Fund (e.g. partnerships, networks, platforms, people’s capacity). Funding decisions allocate resources to relevant inputs, and there is good procurement and cost management (i.e. transparency, competitive procurement, clarity around trade-offs, including considerations around capacity of recipients to deliver).
1.2 Investment in EDI processes (equity)	Funding allocations promote research that supports EDI, facilitates the empowerment of all relevant stakeholders, and builds the capacity of researchers to become leaders in EDI in research.
	EDI is defined as the differentiated and intersectional experiences of all intersectional groups involved in or affected by the research (sociocultural, socioeconomic, racial, religious, sexual groups).
1.3 Investment in equitable partnerships and collaborations in design (equity)	Investments of time and resources are made to ensure fair negotiations and establishment of structures and processes to support equitable partnerships and address power imbalances and co-design of awards.
1.4 Matched funding	Matched funding from partner countries per £1 of Newton Fund funding. Capture the value of £ leveraged where possible.

<b>2 Converting inputs into outputs: Efficiency</b>	
2.1 Operational efficiency	Timely delivery, on plan and on budget. Processes and resources are in place to support effective project management, including appropriate flexibility in processes and resources.
	Delivery to plan will take into account and not penalise awards for changes agreed in advance or external factors outside the control of the project (e.g. pandemics and natural disasters).
2.2 Equitable delivery (equity)	Delivery is undertaken in a way that supports equitable partnerships, enables genuine power sharing (e.g. shared decision making, alignment with local needs and priorities) and promotes EDI.

**3. Converting outputs into outcomes and impact: Effectiveness**

3.1 High-quality, multidisciplinary R&I, positioned for use	R&I that has been designed, delivered and promoted in ways that help address key development challenges is considered high-quality. 'Positioned for use' refers to the presence of the conditions that increase the likelihood that the research will be used.
3.2 Enhanced capacity	Strengthened capacity of individuals, institutions, networks, translation (Partner Country and UK researchers/institutions) in the areas of research, innovation and translation. This includes strengthened linkages on the user side for greater likelihood of uptake (i.e. translation of research into actionable knowledge with practical public good and/or commercial applications). Capacity enhancement of Partner Country researchers/institutions includes building capabilities that outlast the Fund itself, which are used to address gaps in Partner Country R&I.
3.3 Translation of research, commercialisation, and influencing	Uptake of research by target researcher users, e.g. the development of products (including spinouts), services and policies as a result of effective, multidisciplinary, collaborative partnerships. Outputs are socially inclusive.
3.4 Sustainable, equitable partnerships (equity)	Partnerships built are sustained over time, working through multiple funding cycles and projects. Examine the continuity of the partnership beyond the duration of the award, which can be determined by continued and/or new collaborations, joint proposals, etc. Beyond sustained collaborations, also consider the alignment of interests and purposes among partners, the clear value to all parties in the partnership, etc. to determine future sustainability.
3.5 Leverage of investment per £1 of Newton Fund funding	Non-Newton Fund sources invest in the ideas/knowledge outputs from Newton projects. Disaggregate by source (UK, non-UK). Capture the value of £ leveraged where possible.

#### 4. Impact relative to inputs: Cost-effectiveness

4.1 Likelihood of contributing to longer-term outcomes and Fund-level impact	Likelihood of contributing to meaningful and sustainable impacts (i.e. longer-term outcomes and impacts, as per the ToC) – e.g. how well the research contributed knowledge that aligns with the SDGs, got taken up and used, and has the potential to make tangible contributions towards promoting economic growth and poverty alleviation, etc. Where possible, assess elements of equity.
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**Table 5. Rubric guiding the calibration of performance standards**

<b>Performance Standard</b>	<b>Definition</b>
<b>Excellent</b>	<b>The intervention is not only meeting all reasonable expectations/targets, bearing in mind its context, but is substantively exceeding some of these. There may be room for incremental improvements.</b>
<b>Good</b>	<b>The intervention is generally meeting reasonable expectations/targets, allowing for a few minor exceptions. Some improvements may be needed.</b>
<b>Adequate</b>	<b>The intervention, although not meeting all expectations/targets, is fulfilling minimum ‘bottom line’ requirements and is showing acceptable progress overall. Significant improvements may be needed.</b>
<b>Poor</b>	<b>The intervention is not fulfilling minimum ‘bottom line’ requirements and/or not showing acceptable progress overall. Immediate and major improvements are needed.</b>
<b>N/A</b>	<b>Sub-criterion not applicable for the given award.</b>

## Country-level cost-effectiveness tool

Data collection for the country-level cost-effectiveness assessment entailed in-depth interviews with two key stakeholder groups. For each country, these were: (1) the MIC entity that held the Newton Fund country partnership contract (i.e. the Memorandum of Understanding signatory, such as the Ministry of Science and Technology); and (2) the DSIT counterpart that held the Newton Fund country partnership agreement. We relied on guidance from DSIT for each country.<sup>8</sup> With the support of our country teams, we used snowballing to identify additional interviewees.

The KIs were integrated into existing data collection activities that were being undertaken across the evaluation team, namely, the Impact module country teams who were conducting KIs with the primary country partnership entity (stakeholder group 1). The evaluation team also conducted Fund-level interviews with DSIT staff, who were able to provide insights on the country partnerships as well as Fund-level synergies. We relied on DSIT guidance for stakeholder identification of these individuals. We integrated VfM cost-effectiveness questions

<sup>8</sup> It may be that one team or individual from the UK (DSIT) side had oversight of multiple country partnerships. This was determined in close consultation with DSIT.

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into these KII guides to capitalise on existing touchpoints and streamline primary data collection.<sup>9</sup>

For cost-effectiveness, we explored two key lines of inquiry: (1) the Newton Fund's value proposition for the given country; and (2) the extent to which this value proposition was met. Cost-effectiveness questions that were integrated into the KII guides are provided below.

1. Value proposition: What were your expectations in terms of the Fund's value creation in your country/the country, given the resources invested (i.e. under the fixed budget)?
2. Value proposition met: To what extent did the Fund meet your expectations for value creation? Please explain why or why not.

Probes on the Fund's value proposition (value expectation) were included for question 1 and derived from the Fund's stated objectives.<sup>10</sup> They were further refined to be tailored to the given country, based on desk research.<sup>11</sup>

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<sup>9</sup> We opted to utilise KIIs rather than a survey, given the likelihood of low response rates for a survey and the ability to probe on 'value' in more depth through KIIs.

<sup>10</sup> For example, fostering economic development and social welfare and building local innovation ecosystems in partner countries; expanding the UK's global networks, UK reputational gains, and creating trade opportunities; translating R&I into viable commercial products that contribute to economic growth; and using the Fund's R&I evidence base to inform effective policy decisions.

<sup>11</sup> For example, China and India do not see the Newton Fund as ODA but as partnership funding.

# Findings

## Summary of findings

Table 6 sets out a summary of average scores against each of the 5 Es and Table 7 outlines the stakeholder level findings for the cost-effectiveness assessment.

**Table 6. Award level summary findings**

Dimension	Sub-dimension	Sub-dimension average	Dimension average
Economy	1.1	2.9	<b>2.6</b>
	1.2	2.2	
	1.3	2.8	
	1.4*	2.6	
Efficiency	2.1	2.3	<b>2.5</b>
	2.2	2.6	
Effectiveness	3.1	3.1	<b>2.8</b>
	3.2	3.3	
	3.3	2.4	
	3.4	2.7	
	3.5	2.4	
Cost-effectiveness	4.1**	2.6	<b>2.6</b>

\*Sub-dimension 1.4 was scored according to the following criteria:

1 = no evidence of matched funding

2 = mentioned matched funding or effort with no details (includes proposed intention)

3 = matched funding or effort with details less than 100% of UK value

4 = matched funding or effort with details, roughly equal to UK value

NB: actuals unverified

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**\*\*Sub-dimension 4.1 was scored according to the following criteria:**

1 = no funds leveraged

2 = plausible but not specified; follow-on 'projects' without clarity on funding or plausible volume

3 = funds leveraged, plausible volume where unspecified or quantitative amount less than multiplier of 1

4 = funds leveraged, multiplier of  $>/1$ ; plausible sum greater than Newton investment

**Table 7. Cost-effectiveness: stakeholder value summary findings**

<b>Group</b>	<b>Value proposition</b>	<b>Value achieved</b>	<b>Performance</b>	<b>Rationale</b>	<b>Strength of evidence</b>
<p>Researchers and institutions (partner country)</p>	<p>Access to international collaboration, exchanges and funding; strengthened research skills, process/practices, networks, infrastructure, and career outcomes; deepened and sustained collaborations.</p>	<p>Strong capacity gains at the individual and institutional levels, such as enhanced skills, networks, confidence, career progression, and high-quality research outputs; new infrastructures built; processes and tools adopted; enhanced international exposure and visibility; enhanced links and sustained partnerships.</p>	<p>Excellent</p>	<p>The Fund successfully met its value proposition, providing meaningful and sustained benefits for the group.</p>	<p>Strong – substantiated by all data sources (award-level assessments, Outcomes and Impact modules, data science, and high-level interviews)</p>
<p>Researchers and institutions (UK)</p>	<p>Expansion of international research collaborations and networks; access to diverse research environments and data; enhanced reputation and influence.</p>	<p>Enhanced access to new research environments, partnerships and networks; development of high-impact publications and applied research innovations; enhanced UK global research profile; follow-on collaborations and</p>	<p>Excellent</p>	<p>The Fund successfully met its value proposition, providing significant and long-term benefits for UK researchers and institutions.</p>	<p>Strong – substantiated by award-level assessments, Outcomes and Impact modules, data science</p>

		funding; enduring partnerships.			
Private sector (partner countries, UK)	Opportunities for research–industry collaboration; acceleration of product/service development (commercialisable technologies, IP, unique market access); development of innovation pipelines.	Prototype development and early-stage innovation in some contexts (e.g. China, Egypt, India), but uneven and generally limited; somewhat strengthened academia–industry links; limited commercial uptake.	Adequate	The value proposition was partially met. Despite some notable commercial outputs, commercialisation outcomes were uneven and sparse, often falling short of the fully envisioned translation ambitions.	Moderate – evidenced in award-level assessments, Outcomes and Impact modules, data science
Governments and policymakers (partner country)	Strengthened national R&I systems; access to locally relevant, high-quality research outputs for policymaking; increased international cooperation and influence in research, including in areas aligned to national development priorities.	Co-developed calls with highly relevant investments; strengthened national R&I systems (individual, institutional capacities and enhanced partnerships); policy-relevant research outputs aligned with national priorities; actual policy uptake limited;	Good	Most of the expected value was delivered. There was high alignment of activities and outputs with national priorities, as well as strengthened national R&I capacity and strategic partnerships. However, actual	Moderate/Strong – substantiated in Impact module and high-level interviews; supporting evidence from Outcomes module, award-level assessments,

		strengthened strategic partnerships.		policy translation was sparse, with translation pathways more tenuous, owing to lack of systematic policymaker engagement.	and data science
Local communities (partner country)	Improved well-being through applied research in key sectors (e.g. health, agriculture, education, climate, energy), leading to improved policy and products/ services; inclusion in locally relevant innovation processes.	Indirect benefits via relevant research outcomes geared towards development challenges – but too early to determine full benefits; limited direct involvement or co-design.	Adequate	The value proposition was partially met during the lifetime of the Fund, although the prospective value creation is high.	Moderate – award-level assessments; Impact module and high-level interviews speak prospectively of downstream impact
Global research and development community	Generation of high-impact research; meaningful contributions to global science, technology and innovation (ST&I) knowledge; strengthened equitable research partnerships and networks.	High-impact research supporting global ST&I knowledge created; shared and open-source resources (e.g. datasets, publications, platforms); more equitable South–South/North–South networks and partnerships.	Good	Significant benefits achieved, with strong outcomes in R&I, knowledge and partnerships; however, there is more limited visibility of the Fund's impact on global-level ST&I systems.	Moderate – all data sources support findings within the Fund's sphere of influence; however, there is limited oversight on the broader global impact of the Fund

<p>UK science, R&amp;I system</p>	<p>Expansion of global networks, strengthened partnerships, strategic influence and soft power (science diplomacy, reputational gains); creation of wider strategic opportunities between the UK and partner countries, creating opportunities for economic growth (secondary UK benefit).</p>	<p>New and strengthened partnerships in countries aligned with UK research priorities; enhanced UK visibility, science diplomacy and reputational gains; brand recognition of Newton, reputational advantage of affiliation. Secondary benefit: limited economic return at this point in time.</p>	<p>Good</p>	<p>The Fund delivered meaningful strategic value to UK science and innovation actors, although there were limits in funding continuity and insufficient mechanisms for long-term institutional engagement.</p>	<p>Moderate – Impact module, high-level interviews</p>
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# Annex 4: Whole Fund analysis

## Overview

The fund-wide analysis of the Newton Fund complements the findings of the Outcomes, Impact and VfM modules of the impact evaluation. Its unique contribution is its coverage across the full scope of the Fund, including all partner countries and areas of support. As noted in the main report, two of the countries, Chile and Kazakhstan, left the programme early and may be omitted from some analyses. The fund-wide analysis was carried out through a review of the data science indicators collected from the awards; these are summarised below. Where possible, results were aggregated using the following facets:

- Partner organisations (POs)
- recipient countries
- Newton Fund pillars
- policy markers
- sectors
- years.

The analysis section of the methodology summarises the data sources, purpose of analysis, and key exhibits used in presenting the findings.

This analysis is based on the main data repositories relevant to the Newton Fund: DSIT's reporting system (RODA), Researchfish, Web of Science (WoS), OpenAlex and Overton. The results of these analyses were shared and discussed among the wider project team to integrate into the outcomes, impact and VfM modules data analysis as relevant.

Data was extracted in the period June–August 2024.

The fund-wide analysis contributes to answering five of the six key evaluation questions (EQs) (Table 8) that guide the impact evaluation of the Newton Fund.

**Table 8. Key EQs for the Newton Fund impact evaluation**

No.	Question	Inclusion in fund-wide analysis
1	What long-term outcomes (intended and unintended) has the Newton Fund contributed to?	Yes
2	How far is the Newton Fund on track and likely to contribute to the intended impacts, as set out in the ToC?	Yes
3	How far has the Newton Fund contributed to R&I systems in the UK and partner countries?	Yes
4	What factors have supported or hindered the Newton Fund from contributing to long-term outcomes and impacts?	No
5	Has the Newton Fund demonstrated VfM? Has this changed over time?	Yes
6	What are the key learning points from the Newton Fund?	Yes

The fund-wide analysis was one of the few opportunities to show insights across the full set of POs, because those outside UK Research and Innovation (UKRI) do not collect outcomes data via the Researchfish platform. Analyses where this will be possible are:

- publication metrics,
- investment (actual spend),
- innovation and commercialisation,
- Sustainable Development Goals (SDGs),
- further funding,
- national collaboration,
- institutional collaboration,
- topic modelling, and
- policy influence.

The next section presents more detail on the methodology.

## Methodology

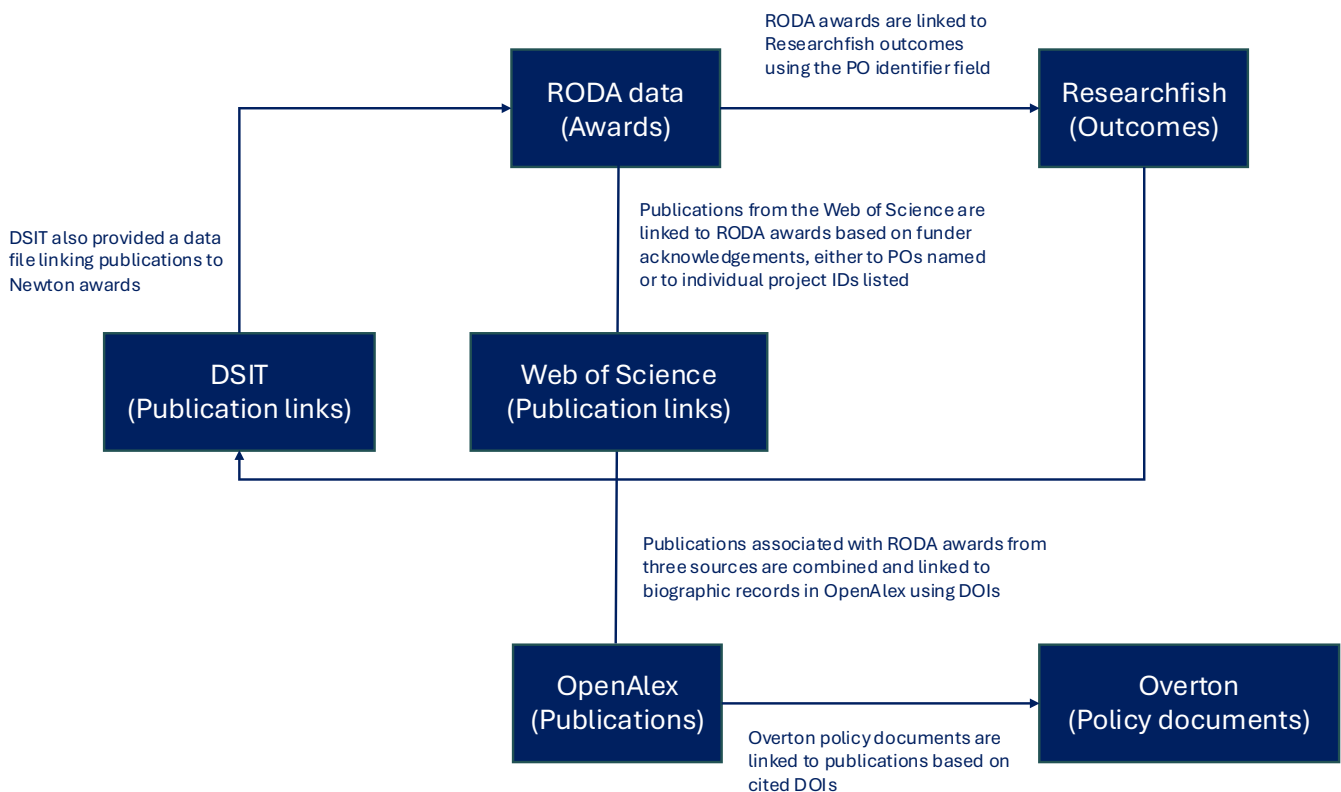
Data from several sources was combined for this analysis, as depicted in Figure 8. RODA data about Newton Fund awards is linked to Researchfish outcomes based on the PO identifier field listed in the RODA database.

RODA awards are also linked to publications, based on three sources:

- DSIT – a file listing the publications associated with Newton Fund awards (n=17,344)
- WoS – based on the funder acknowledgements query listed in Table 1 (n=10,812)
- Researchfish – publication outcomes associated with Newton Fund awards (n=9,635).

Using Digital Object Identifiers (DOIs), publications are linked with bibliographic records in OpenAlex. These are subsequently linked to Overton policy documents based on the publications they referenced.

**Figure 8. Methodology**



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## Topic modelling approach

- Topic modelling is a natural language processing technique that determines how to use specific clusters of related words (topics) to categorise the underlying data.
- Because it is data-driven, results are derived from the data itself and therefore are independent of predetermined categorical systems (such as journal categories or fields of research).
- Text was extracted for each of the 19,254 publication outputs associated with the Newton Fund from the titles and abstracts. After filtering non-English content, copyright information and other miscellaneous supplementary data, 18,585 documents were selected for the analysis.
- After normalising texts (e.g. removing punctuation, standardising diacritics), the top 100,000 most frequently occurring trigrams (i.e. up to three-word phrases) were extracted and weighted according to the commonly used Term Frequency-Inverse Document Frequency (TF-IDF) algorithm.
- The non-negative matrix factorisation (NMF) algorithm was used to create a topics model with various sizes between 25 and 100 topics. The model with 75 topics was selected for the analysis because it provides sufficient detail for analytical purposes.
- Each document was assigned a primary topic (i.e. the topic that was assigned the highest weight) and up to two additional topics if their weight exceeded a minimum threshold. Each topic was assigned an indicative label, based on the top 20 most highly weighted keywords.
- Topic modelling can be used in a number of ways:
  - **It is most useful to answer specific questions** a funder, council or research group may have, for example identifying gaps in research or looking at the volume of publication in a field against the funding priorities.
  - **It supports comparisons** of areas of primary interest of the research funder or agency with the actual research completed on a topic.
  - **It identifies gaps and focus areas** by mapping topic clusters against the activity in each area by PO, country, and RODA topic areas. For example, on the detailed topic modelling slides, we can see that in Brazil, considerable research was supported in Land Use, Climate Change and Food Security, but very little research was supported in Monsoon and Precipitation Patterns and Rainfall Forecasting. The data can be looked at from the perspectives of the countries, the POs, and the areas of research identified in RODA, depending on what the user wants to know.

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## Limitations

- The RODA data collected covers the time period FQ1 2014/15 to FQ2 2023/24. This dataset may differ from the figures publicly available through the Statistics on International Development (SID) publication, which is derived from a separate data extract and processed on a different publication schedule.
- **Two countries (Chile and Kazakhstan) had limited participation in the programme.** Data and indicators are provided where possible. No publication outputs could be associated with awards to Kazakhstan; hence they are omitted from any analysis based on publication data.
- Chile was designated a high-income country during the Fund's implementation and so was removed from the Organisation for Economic Co-operation and Development Assistance Committee (OECD-DAC) list, after which it was ineligible for funding. Funding took place between 2014 and 2017.
- In Kazakhstan, the partnership was cancelled because the proposed funding partners were unable to match the UK contribution.
- **Of the 3,380 awards provided in the RODA data, 1,085 had no Recipient Country specified.**<sup>1213</sup> Of these, 980 could be assigned to a country based on 'Programme' or 'Activity' title fields. Most of those that were not assigned a country are awards associated with delivery costs, although there are some research activities that were ambiguous and could not be linked to a country. Where it was not possible to include a specific Recipient Country, spend was treated as zero. The unattributed spend equates to a small proportion of the overall spend and mostly includes administrative and/or operational costs.
- **It became apparent that the classification of awards by sector contained anomalies during implementation of the analysis.** Specifically, a large proportion of the Fund (16%) is classified under the Sector '43082: Res/sci inst'. However, a rapid review of the project titles in the list reveals many awards that could have been assigned to Sectors such as '41082: Env res', '12182: Med res' or '31182: Agri res'. Hence, interpretation of analysis by Sector should take into account that some Sector indicators may be missing awards that were classified under '43082: Res/sci inst'.
- **Although the RODA field 'Aid type' is supplied to describe the type of award (i.e. projects, fellowships, studentships, networking), the majority are classified as 'D02: Other technical assistance', even though some are related to projects and other aid types based on their description. This is partly because official ODA reporting guidelines established by the OECD restrict Aid Type reporting to a**

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<sup>12</sup> For the purposes of analysis for this evaluation, 'Recipient Country' was used in place of 'Benefiting Country'. Where there was no value in the row, it was referred to as missing, or an assumption was made based on the available grant names and/or descriptions. Usually, where 'Recipient Country' was missing, the grants were administrative costs and were not related to a project. We note that now DSIT use 'Benefiting Country' to clarify where the grant is intended to have an effect, rather than focusing on the institution to which the grant funding is distributed.

<sup>13</sup> Stopped awards accounted for almost 400 awards i.e. over 10% of awards in RODA and these were not filtered out for this analysis.

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**single category per activity.** Hence, it is not possible to compare across POs, Recipient Countries or Sectors according to Aid Type. When making comparisons, the reader should bear in mind differences in the type of funding implemented by different POs.

- **There were 41 awards where the PO identifiers specified in RODA were updated.** The PO identifier is used to link RODA records to Researchfish data.
- **There was uncertainty relating to the start and end dates for some awards because RODA data collection only started to include this metric in mid-2019.** For example, all projects are listed with the same planned start date, often very early on in the programme. Hence, in some of the analysis, certain POs have been excluded. Analysis on start and end dates only included the data that existed as the analysis considered any delays to grants distribution or commencement.

Publication metrics have been compiled and reported in line with recommendations from the Declaration on Research Assessment (DORA) and the Leiden Manifesto. Coverage of bibliographic databases is biased towards English language publications and may not include materials published in local languages or in domestic journals.

**POs have varying approaches to reporting publications and other outputs, and the relevance of specific metrics can differ across POs.** This may have an impact on PO standing against some metrics, such as citation measures. A lower citation rate is not necessarily a measure of poorer quality in these cases.

**Sector 91010: Administrative costs, DSIT (formerly BEIS) Finance and UKRI are omitted from analysis by Sector (except for UKRI in spend).**

**Data is only available for some data points on UKRI council publications.**

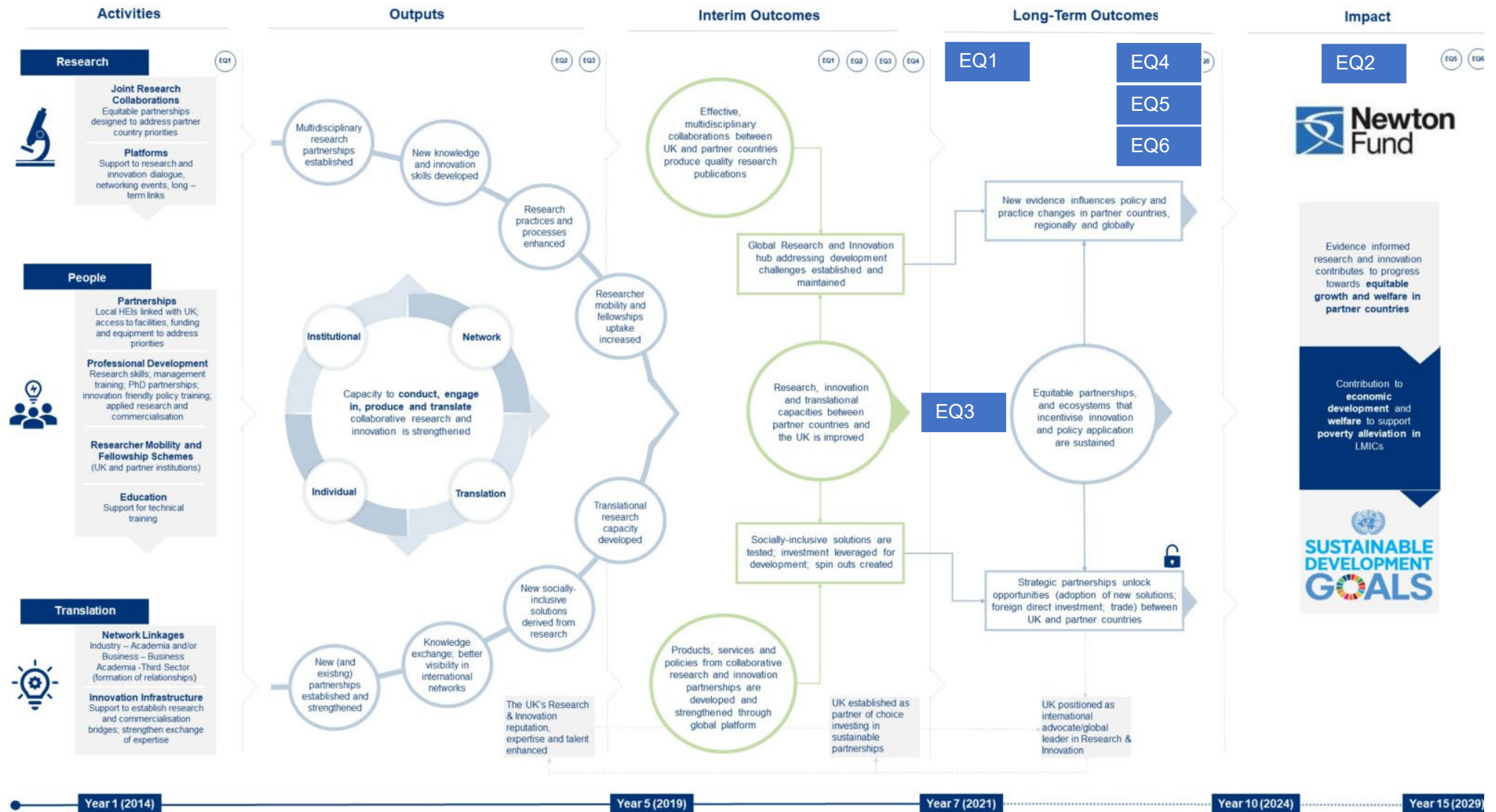
**Publication data is linked to the Newton Fund in three ways:**

- to specific awards
- only to PO
- only to the Newton Fund in general.

Hence, depending on how the data is aggregated, different proportions of the full publications set will be utilised. In particular, publications for non-UKRI research councils are not linked to specific awards, owing to the use of different identifiers in funder acknowledgements:

- For POs, 14,784/19,254 publications are linked (77%)
- For Recipient Country or Sector, 9,454/19,254 publications are linked (49%).

# Annex 5: Newton Fund ToC





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