



Department for  
Business, Energy  
& Industrial Strategy

# Stage 1a: Synthesis Report of evidence on integration of relevance, fairness, gender, poverty and social inclusion in funded activities

Evaluation of the Global Challenges Research Fund

February 2022

Date: 16 February 2022

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## **Acknowledgements**

The evaluation team would like to thank the Department for Business, Energy and Industrial Strategy (BEIS) staff who have guided, informed and supported Stage 1a of the GCRF evaluation. We would also like to thank GCRF's delivery partners for sharing their time and valuable insights. We would also like to thank all the module teams for conducting the insightful Stage 1a assessments and our partners, Itad, RAND Europe, AFIDEP, Athena Infonomics, NIRAS-LTS and Digital Science for their valued collaboration.

## **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, or of any of the individuals and organisations referred to in the report.

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# List of acronyms

A360	Adolescents 360
AAS	African Academy of Sciences
AHRC	Arts and Humanities Research Council
APHRC	African Population and Health Research Center
ARUA	African Research Universities Alliance
BA	British Academy
BBSRC	Biotechnology and Biological Sciences Research Council
BEIS	Department for Business, Energy and Industrial Strategy
C4C	Choices 4 Change
CIFF	Children’s Investment Fund Foundation
Co-I	Co-Investigator
CSO	Civil Society Organisation
CYP	Couple Years of Protection
DFID	Department for International Development
DP	Delivery Partner
EAC	Evaluation Advisory Committee
EDI	Equality, Diversity and Inclusion
EQ	Evaluation Question
ESRC	Economic and Social Research Council
EvT	Evaluation Team
FCDO	Foreign, Commonwealth and Development Office
FCO	Foreign and Commonwealth Office
FLAIR	Future Leaders – African Independent Research

FfA	Force Field Analysis
FP	Family Planning
GAM	Gender with Age Marker
GCRF	Global Challenges Research Fund
GE	Gender Equality
GEDI	Gender Equality, Disability and Inclusion
GESIP	Gender Equality, Social Inclusion and Poverty
GLAM	Global Learning for Adaptive Management
GNI	Gross National Income
GROW	Growing Research Capacity
HCD	Human-Centred Design
HIV	Human Immunodeficiency Virus
HMG	Her Majesty's Government
ICAI	Independent Commission for Aid
ICRW	International Centre for Research on Women
ICSF	International Centre for Social Franchising
IDRC	International Development Research Centre, Canada
IDS	Institute of Development Studies
IPP	International Partnerships Programme
ISCF	International Strategy Challenge Fund
KII	Key Informant Interview
KPI	Key Performance Indicator
LARC	Long-Acting Reversible Contraceptive
LIC	Low-Income Country
LMIC	Low- and Middle-Income Country

LSO	London Support Office
M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation and Learning
MEQ	Main Evaluation Question
MRC	Medical Research Council
MSI	Marie Stopes International
MSK	Marie Stopes Kenya
MSZ	Marie Stopes Zambia
NERC	Natural Environment Research Council
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OECD DAC	Organisation for Economic Cooperation and Development's Development Assistance Committee
PHARE	Promoting Health, Adjusting the Reproductive Environment
PI	Principal Investigator
PSI	Population Services International
R&D	Research and Development
R&I	Research and Innovation
R4D	Research for Development
RAEng	Royal Academy of Engineering
RH	Reproductive Health
RODA	Reporting Official Development Assistance
RQ+	Research Quality Plus
RS	Royal Society
SAG	Strategic Advisory Group
SCOR	Strategic Coherence of ODA-funded Research



SDG	Sustainable Development Goal
SFC	Scottish Funding Council
STFC	Science and Technology Facilities Council
SI	Social Inclusion
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
TBE	Theory-Based Evaluation
ToC	Theory of Change
TRANSFORM	Translating Effective Practices from Research, Marketing and Design
U-FE	Utilization-Focused Evaluation
UK	United Kingdom
UKCDR	UK Collaborative on Development Research
UKRI	UK Research and Innovation
UKSA	UK Space Agency
UOA	Unit of Assessment
US	United States
USAID	US Agency for International Development
VfM	Value for Money

# Executive Summary

*This is the Global Challenges Research Fund (GCRF) synthesis report on relevance, fairness, gender, social inclusion and poverty. It brings together the findings of the GCRF evaluation Stage 1a, 2020–21. GCRF is an ambitious, large scale fund that harnesses the UK’s research and innovation (R&I) base, in partnership with institutions in low and middle income countries (LMIC), to develop solutions to a complex array of sustainable development challenges.*

Funded as part of the 2015 Aid Strategy, the fund is innovative in scope and has ambitions for its diverse R&I portfolio to contribute to material development impact, at scale, in the countries where it is working. Overall, we find that GCRF is making clear progress in terms of establishing the foundations for development impact - becoming relevant, coherent, well-targeted, fair, gender-sensitive and socially inclusive, especially in the ‘signature investments’. However, inherent challenges in the fund’s size and complicated delivery architecture mean that progress is varied across the portfolio, and important gaps remain, especially around managing for development impact and how poverty is addressed. Our recommendations highlight three strategic areas for improvement to strengthen GCRF’s contribution to sustainable development impact.

## Overview

**The GCRF is a £1.5 billion fund announced by the UK government in late 2015 to support pioneering research that addresses the challenges faced by developing countries.** GCRF forms part of the UK’s Official Development Assistance (ODA) commitment and contributes to the achievement of the UK’s 2015 aid strategy’s goals.

It ensures that UK science takes a leading role in addressing the challenges faced by developing countries while also developing the UK’s ability to deliver cutting-edge research and innovation (R&I) for sustainable development. GCRF is implemented by 17 of the UK’s research and innovation funders, which commission R&I as delivery partners (DPs)<sup>1</sup>.

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<sup>1</sup> The 17 Delivery Partners for GCRF include: UKRI (Arts and Humanities Research Council, Biotechnology and Biological Sciences Research Council, Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical Research Council, Natural Environment Research Council, Science and Technology Facilities Council, and Innovate UK and Research England); Scottish Funding Council, Higher Education Funding Council for Wales; Department for the Economy Northern Ireland; British Academy; Royal Academy; Royal Academy of Engineering; UK Space Agency.

GCRF's Theory of Change (ToC) sets out **GCRF's expected impact**, to emerge after ten years (two five-year phases):

*'Widespread use and adoption of GCRF-supported research-based solutions and technological innovations enables stakeholders in LMICs to make progress at scale towards addressing complex development challenges. These efforts will contribute to the achievement of the Sustainable Development Goals, enhancing people's wellbeing, improving equality for people of all genders, promoting social inclusion, economic development and environmental sustainability in developing countries. These improvements will be sustained into the future by enduring equitable research and innovation partnerships between the UK and LMICs, and enhanced capabilities for challenge-oriented research and innovation in all regions'.<sup>2</sup>*

**The GCRF strategy** sets out three objectives to support this impact:<sup>3</sup>

- Promote challenge-led disciplinary and interdisciplinary research, including the participation of researchers who may not previously have considered the applicability of their work to development issues.
- Strengthen capacity for research, innovation and knowledge exchange in the UK and developing countries through partnership with excellent UK research and researchers.
- Provide an agile response to emergencies where there is an urgent research need.

Through these objectives, GCRF aims to contribute to realising the ambitions of the UK aid strategy and to making practical progress on the global effort to address the United Nations' sustainable development goals (SDGs).<sup>4</sup> As a secondary objective, GCRF also aims to build the position and role of the UK R&I sector as global leaders in addressing global development challenges. GCRF's ToC and the ambitions set out in its the strategy provide the overall framing for the evaluation to assess progress.

**The purpose of GCRF's evaluation is to assess the extent to which GCRF has contributed to its objectives and impact.** The evaluation is conducted over five years and across three stages. The evaluation started in 2020, when GCRF was in the final year of its first phase of five years (2016-2020), with a new phase then expected to start in March 2021 (2021-2025).

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<sup>2</sup> GCRF, 2018. GCRF Evaluation Foundation Stage. Available at:

<https://www.gov.uk/government/publications/global-challenges-research-fund-gcrf-foundation-stage-evaluation>

<sup>3</sup> BEIS, 2017. Global Challenges Research Fund (GCRF): How the Fund Works. Available at:

[https://www.gov.uk/government/publications/global-challenges-research-fund/global-challenges-research-fund-gcrf-how-the-fund-](https://www.gov.uk/government/publications/global-challenges-research-fund/global-challenges-research-fund-gcrf-how-the-fund-works#:~:text=GCRF%20forms%20part%20of%20the,the%20poorest%20people%20and%20countries;)

[works#:~:text=GCRF%20forms%20part%20of%20the,the%20poorest%20people%20and%20countries;](https://www.gov.uk/government/publications/global-challenges-research-fund/global-challenges-research-fund-gcrf-how-the-fund-works#:~:text=GCRF%20forms%20part%20of%20the,the%20poorest%20people%20and%20countries;)

BEIS, 2017. UK Strategy for the Global Challenges Research Fund (GCRF). Available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf)

<sup>4</sup> Available at: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

**Throughout the first year of the evaluation, there have been significant changes in the strategic, policy and economic context of GCRF, including substantial budget cuts for 2021–22 as a result of a reduction in the UK’s ODA commitment due to the economic impact of the Covid-19 pandemic, the implications of which are still emerging.** Although, in 2021, GCRF had reached the end of its first phase, many awards were designed to continue into the next phase and will be curtailed by the budget cuts. This has implications for the fund’s strategy and ambitions for development impact at scale, as well as the evaluation. Beyond the impacts on BEIS and GCRF specifically, Covid-19 has had an impact on UK research institutions and, especially, universities, both in terms of budgets and capability. This will not only affect the delivery of the evaluation but also change the strategic context where the purpose of GCRF may be modified. The evaluation is sufficiently flexible to explore these effects through its stages and modules, and we consider some of these potential impacts and implications in the final section of this report.

## **Approach and method**

**This synthesis report draws together findings from three assessments of how relevance and coherence, fairness, gender, social inclusion and poverty – the foundations for development impact - have been addressed in GCRF. The work was carried out between July 2020 and February 2021.** This stage is about answering main evaluation question (MEQ) 1: *Is GCRF relevant, well-targeted, fair, gender-sensitive, socially inclusive and well-managed?*

Stage 1a of the evaluation aims to understand how GCRF has focused on creating the foundations for outcomes and impact, as described in the ToC, and how these foundations position the fund to deliver on its intended impact and objectives. Four modules were implemented in Stage 1a on: management; relevance and coherence; fairness; and gender, social inclusion and poverty (GESIP). Through these modules, Stage 1a therefore provides a check on whether the early assumptions in the ToC hold, as these provide a foundation for future assessments of GCRF’s outcomes and impact. The latter three were combined into this synthesis report. The three technical reports are available from Itad Ltd with more methodological detail provided for each.

**The key terms used in the evaluation are defined as follows** (for more detail on the focus and framing of the three modules, see Section 4.1.1):

**Relevance** is framed in relation to the Organisation for Economic Cooperation and Development's Development Assistance Committee (OECD DAC) criteria, where it is defined as 'The extent to which the intervention objectives and design respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities and continue to do so if circumstances change'. It is also framed in relation to RQ+ framings around research importance: '[T]he importance and value to key intended users of the new knowledge and understanding generated by the research', and how far 'research processes and products' are relevant to the needs and priorities of potential users.<sup>5</sup>

**Coherence** is defined in accordance with OECD DAC criteria as 'The compatibility of the intervention with other interventions in a country, sector or institution'.

**Research fairness** is defined as a way of designing, conducting and evaluating research that takes into consideration the potential effects (positive and/or negative) of the research on all those involved (as partners, participants, users, and beneficiaries), as well as the broader impact on the context where the research takes place.<sup>6</sup>

**Gender** is a social scientific term used to describe shared social ideals of femininity and masculinity, associated behavioural expectations and relations between sexes.<sup>7</sup>

**Social inclusion (SI)** is defined as the process of improving the terms of participation in society, particularly for people who are disadvantaged, through enhancing opportunities, access to resources, voice and respect for rights.<sup>8</sup>

**Poverty** entails more than the lack of income and productive resources to ensure sustainable livelihoods. Its manifestations include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion, as well as the lack of participation in decision making.<sup>9</sup>

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<sup>5</sup> Ofir, Z., Schwandt, T., Duggan, C. and McLean, R., 2016. Research Quality Plus [RQ+]: A Holistic Approach to Evaluating Research, IDRC. Available at: <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/56528/IDL-56528.pdf?sequence=2&isAllowed=y>

<sup>6</sup> The 'fairness' definition draws on the Research Fairness Initiative (RFI), developed by the Council on Health Research for Development (COHRED) <https://rfi.cohred.org>

<sup>7</sup> Cavaghan, R., 2020. Gender, Science, Technology and Development: Literature Review for the University of Edinburgh's Working Group on Integrating Gender in GCRF Applications. 10.13140/RG.2.2.18199.73125. Further elaborated in Tetra Tech, 2020. Review of Approaches to Gender Equality: the Newton Fund and the Global Challenges Research Fund. London, BEIS, p.7.

<sup>8</sup> UN Department of Economic and Social Affairs, 2016. Report on the world social situation 2016. Leaving no one behind: the imperative of inclusive development. Available at: <https://www.un.org/esa/socdev/rwss/2016/chapter1.pdf>

<sup>9</sup> <https://www.un.org/en/global-issues/ending-poverty>

The Stage 1a modules included a broad but light-touch analysis of the portfolio using data science techniques, as well as in-depth insights derived from qualitative deep dives through a sample of awards, reflecting on different aspects required to achieve development impact. The synthesis (conducted in March 2021) used a variant of a thematic analysis approach, a framework analysis. Thematic analysis is a systematic method for identifying, analysing and reporting patterns (themes) within qualitative data. Framework themes were identified first from the GCRF ToC and insights from the research and innovation for development field. The module reports were analysed and coded, and further themes were developed through an iterative, systematic process to arrive at synthesised insights and conclusions about where GCRF is working well and where it could be improved. The synthesis report also discusses the updated broad trends from the data science analysis. Links are made to the themes identified through the qualitative analysis, but this data was not incorporated into the synthesis process. More information on the evidence base and methods can be found in Annexes 1 and 3.

Like all evaluations, our approach has strengths and limitations. The overview of the portfolio as a whole via data science analysis is limited by incomplete data and varied data reporting systems implemented across the fund. This analysis therefore represents a starting point from which GCRF can build and improve coverage and consistency. The deep dive case studies were purposively sampled with the Fund exploring different fundamentals of development impact in depth. The size and diversity of the fund means, however, that any sample will not be representative or generalisable. This evaluation will build on these foundations in its later stages.

### Key findings

**While GCRF is a very large and complex fund, our data science analysis identifies some overall trends in the portfolio, including a high volume of diverse outputs and interdisciplinary collaborations that help position GCRF as an innovative - research for development - fund.** The portfolio produces a high volume and range of outputs beyond academic publications, so far including 20,373 creative, policy and technology outputs<sup>10</sup>. This is derived from around 3,086 awards across the fund<sup>11</sup>. This is where GCRF has the potential to add value compared to a traditional R&I fund, and the outputs' use and influence requires further investigation in later stages of the evaluation. Outputs targeted to policy, innovation and business audiences, as creative, technological and other products are more likely to be accessed and positioned for use (i.e. not behind journal paywalls) by target user groups beyond academia. Take up and use by policy, practice and business stakeholders is necessary to realise the research uptake and development impacts envisaged by the fund. The data analysis also shows that GCRF is more multidisciplinary and international than the wider UKRI portfolio, in line with its strategic aims. However, GCRF funding is benefitting primarily middle-income countries, with a sparser footprint in low-income countries.

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<sup>10</sup> Source: Gateway to Research. See also Annex 4 for a technical note on the data science approach

<sup>11</sup> Source: BEIS tracker. UKRI and Research councils (2114 awards), academies (908 awards), other agencies (64 awards). This excludes Higher Education Research Councils, where the number of awards is unclear from the data.

Half the funding is awarded via large-scale programmes (the ‘signature investments’) <sup>12</sup> where we have observed strong practices that address the development impact foundations as proposed in the GCRF ToC and align with a R&I for development challenge-oriented fund. The other half of the funding is awarded as ‘core’ funding to DPs rather than through more explicitly cross-cutting and challenge-oriented routes. Here, practices are more varied, and the challenge areas do not provide a sufficiently strong organising structure for the portfolio overall. The implications of these trends are unpacked further in the findings in the report.

**In Stage 1a of the evaluation, the three assessments found that GCRF is making clear progress in terms of becoming relevant, coherent, well-targeted, fair, gender-sensitive and socially inclusive, especially in the ‘signature investments’, but progress is uneven, and gaps remain, especially around how poverty considerations are embedded in activities.** The greatest progress is seen in relation to relevance and equitable partnerships in the wider portfolio, and in the signature investments – Growing Research Capacity (GROW), Interdisciplinary Hubs, the UK Space Agency’s (UKSA’s) International Partnerships Programme (IPP), the Future Leaders – African Independent Research (FLAIR) programme and the Collective Fund – are where we have seen practices, structures and systems that have been more effective at combining research excellence with a strategic focus on the fundamentals for development impact. These include:

- funding scoping phases and robust selection processes to build in relevance;
- enhancing coherence through connecting and clustering awards within portfolios to create cohorts;
- supporting fairness and equity through investment in partnership building and equitable governance processes;
- funding the establishment of stakeholder networks and alliances through wider engagement processes;
- mainstreaming gender equality, with expert advice and support;
- investment in stronger monitoring, learning and reporting processes.

At present these large-scale and cross-cutting investments account for around half of the portfolio, so these are important examples that provide useful learning for other parts of the portfolio.

The weakest progress was seen in relation to the explicit integration of poverty concerns at all levels of the fund, which is a significant gap in a fund intending to contribute to the economic development and welfare of developing countries. There is a wide diversity in the framing and understanding of poverty-related terminology across the system. This means that poverty dimensions of GCRF-supported research are not tracked, and there is under-reporting of poverty results and outcomes.

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<sup>12</sup> This is an estimate, based on the BEIS Tracker. The data currently does not permit more precise calculations, as spend data on the signature investments is coded differently by different DPs as core, programme or project, depending on the DP.



## Conclusions

GCRF is an ambitious, large scale fund that harnesses the UK R&I base, in partnership with institutions in low and middle Income countries, to develop solutions to a complex array of development challenges at scale. Funded as part of the 2015 Aid Strategy, it is innovative in scope and scale, and the fund has ambitions for its R&I portfolio to contribute to material development impact in the countries where it is working. Stage 1a of the evaluation found that GCRF has established promising foundations for delivering this development impact, despite some inherent challenges in its scale and complicated delivery architecture.

**We conclude that, with promising foundations in place in signature programmes and other examples of strong practices, GCRF's transformative potential as a whole is constrained by three key dynamics in the fund:**

- **Inconsistency in processes to ensure research excellence is always combined with development outcomes and wider considerations of equity, i.e. ODA excellence. This arises** from the prioritisation of research excellence in commissioning but delegation to the research community of managing for development impact. There have been efforts to resolve this, such as a focus on equitable partnerships and stakeholder engagement amongst the various programmes and awards highlighted above. Inconsistent approaches remain, affecting capacity building and partnerships and how fairness, gender, inclusion and poverty are addressed in awards. There is therefore a need to develop an integrated concept of excellence for research for development to facilitate a clear use and impact orientation from the start. We have framed this as 'ODA research excellence'.
- **Lack of portfolio-wide overview, which constrains innovation and managing for development impact.** The complicated delivery architecture means that there are multiple information systems, leading to partial and uneven data about the GCRF portfolio. This constrains BEIS' ability to establish a portfolio-wide view of the fund, and for the fund to be managed strategically as an integrated portfolio and uneven patterns addressed, e.g. the flow of GCRF funding to predominantly middle income countries. A significant investment being made by BEIS in this area is the Reporting Official Development Assistance (RODA) system, which will capture important cross-fund financial information. Without additional systems and processes to support a strategic, portfolio-wide view, GCRF risks, however, funding a portfolio of research that does not reach its full potential and become greater than the sum of its parts, but which remains as isolated research projects and discrete networks, with innovation occurring in pockets and silos without transmitting the benefits of learning around how to address development challenges or build capacity across the whole research ecosystem, a stated aim in GCRF's strategy.
- **A Challenge Fund identity has not developed fully in GCRF,** mainly due to GCRF funding being channelled for the most part through existing DP systems and processes. This has led to fragmentation and silo'd working, constraining a collective, mission-oriented identity that could transcend DP and disciplinary silos, provide a centralised



strategic direction and create a strong pull to leverage learning from innovations in how to address challenges and create transformative advances for development impact as a whole fund. We see this working in the signature investments, so there are strong opportunities to build on this across the whole fund.

Strategic recommendations and specific actions for BEIS and DPs to address these dynamics are discussed and set out in the report.

## **Forward look for GCRF and the evaluation**

**The next stage of the evaluation, Stage 1b, is designed to take a deeper dive into the signature investments, and the emergence of early results proposed by the ToC, in order to identify why we are seeing clusters of stronger practices in some areas and not others; however, GCRF's progress will be significantly affected by the funding reductions in 2021.** Given our findings in this stage, we would have had a good degree of confidence that these early results would be starting to emerge in key parts of the portfolio. The impact of the Covid-19 pandemic has, however, led to sudden funding reductions announced early in 2021. These are likely to pose risks to GCRF's ability to support the early results seen in the ToC and will limit its impact potential in the next phases. The area where we have observed the most progress – equitable partnerships – is likely to experience significant disruption and cancellation, with increased negative impacts for less well-resourced partners and stakeholder communities in low- and middle-income countries (LMICs) who have invested time, resource and staff in GCRF projects.

Notwithstanding these changes, an adjusted GCRF may offer opportunities for addressing some of the constraints we have identified in our conclusions and for re-designing GCRF to be focussed as an R&I for development challenge fund. Stage 1a has found that there are multiple examples of positive progress on the integration of relevance, coherence, fairness and GESIP, and there are multiple opportunities to build on those experiences to deliver a more focused fund. Our recommendations are made in this spirit and are mindful of the new funding context, offering strategic measures and tangible actions that can be taken by BEIS and DP stakeholders in the short and medium term.

## Recommendations

Figure 1: Summary of the recommendations from Stage 1a



### **Recommendation 1: Establish a more consistent Challenge Fund identity, with the cultures, shared ownership and structures that support this.**

GCRF is more than a research fund; it is about combining research excellence and development impact, as the challenge-oriented parts of the portfolio demonstrate. Although needing to operate within the Haldane parameters, adopting an explicit Challenge Fund approach is possible within the GCRF devolved system. Key structures and systems are needed to deliver a fund that has mission-oriented identity and ownership, for which the signature investments offer useful models that could be applied across the whole GCRF portfolio, as do other funds such as the Industrial Strategy Challenge Fund (ISCF) managed by UK Research and Innovation (UKRI). Specific actions to deliver this recommendation are set out in section 7 of the main report.

### **Recommendation 2: Establish quality standards for ‘ODA research excellence’ to optimise the combination of research excellence and development impact.**

As the synthesis identified, this unresolved tension leads at times to the privileging of research excellence and a lower compliance approach to the fundamentals of development impact. These should include explicit ‘do no harm’ principles. The efforts on equitable partnerships and safeguarding have shown how the GCRF community can come together around key priorities. Quality standards processes have been shown to be transformative in a number of settings, notably in humanitarian assistance with the Sphere standards.<sup>13</sup> A collective process of

<sup>13</sup> Collective processes to agree, implement and monitor quality standards have been shown to be important drivers of practice improvements in a number of fields – most notably in humanitarian response, where the

agreeing ambitious quality standards for ‘research with ODA excellence’ for the whole fund to work towards would help BEIS, DPs and award holders cultivate a culture of improvement to realise the ambition of creating transformative research on global challenges. IDRC’s RQ+ framework, which assesses quality of research in development contexts could provide the starting point for such an initiative.<sup>14</sup> Specific actions to deliver this recommendation are set out in section 7 of the main report.

**Recommendation 3: Establish a collective monitoring and learning process and structure that promotes a fund-wide portfolio overview to support adaptive management<sup>15</sup>, building on the opportunities offered by Reporting Official Development Assistance (RODA) and the Key Performance Indicator (KPI) process, but going beyond data and reporting to encompass a learning strategy that is resourced for knowledge management, i.e. capturing and sharing learning across BEIS and the DPs to learn from innovations and drive ODA research excellence across the fund.**

With the RODA system coming on board, GCRF is now in a good place to build up a shared portfolio overview and promote a sense of shared ownership with DPs. Improved information gathering across the fund will support the tracking of the quality standards and enhance a portfolio-wide view; however, data reporting should be accompanied by a broader collective learning strategy that is able to identify and capture innovations and promising practice in different areas of the portfolio, and share learning across BEIS, DPs and award holders. Specific actions to deliver this recommendation are set out in section 7 of the main report.

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Sphere standards process has demonstrably improved the quality to improve the quality and accountability of humanitarian assistance. <https://spherestandards.org/about/>

<sup>14</sup> IDRC, 2018. Research Quality Plus. Available at: <https://www.idrc.ca/en/research-in-action/research-quality-plus>

<sup>15</sup> See Section 2.1.2 for more detail.

# 1. Introduction

*This is the Global Challenges Research Fund (GCRF) synthesis report on relevance, fairness, gender, social inclusion and poverty. It brings together the findings of the GCRF evaluation Stage 1a, 2020–21. It looks at the extent to which the foundations for achieving development impact are in place in GCRF, whether this is working well, and where it could be improved.*

**GCRF is a £1.5 billion fund announced by the UK government in late 2015 to support pioneering research that addresses the challenges faced by developing countries.** GCRF forms part of the UK's Official Development Assistance (ODA) commitment and contributes to the achievement of the UK's 2015 aid strategy's goals. It ensures that UK science takes a leading role in addressing the challenges faced by developing countries while also developing the UK's ability to deliver cutting-edge research and innovation (R&I) for sustainable development. GCRF is overseen by the Department for Business, Energy and Industrial Strategy (BEIS) and implemented by 17 of the UK's R&I funders, which lead on commissioning R&I to address development challenges as Delivery Partners (DPs).

## 1.1 Structure of the report

This synthesis report is structured as follows.

- Section 1 presents an introduction to GCRF, the evaluation and the policy context in 2021.
- Section 2 sets out the methodology for the synthesis.
- Section 3 sets out an overview of the portfolio.
- Section 4 sets out the findings of the synthesis.
- Section 5 draws out conclusions.
- Section 6 sets out key strategic recommendations, given the changed context for GCRF.

## 1.2 Rationale and objectives of the GCRF

The overarching rationale for GCRF is that complex development challenges require new kinds of R&I. GCRF was established to respond to a perceived critical need to address urgent and evolving global development challenges, through catalysing a new wave of R&I in order to make progress towards the Sustainable Development Goals (SDGs). The assumption is that new kinds of R&I are needed to tackle challenges, including work that is interdisciplinary, mobilises multi-stakeholder partnerships across the Global North and South and across

sectoral boundaries, to build lasting R&I capabilities and infrastructures in low- and middle-income countries (LMICs).

The Theory of Change (ToC) sets out **GCRF's expected impact** as:

*'Widespread use and adoption of GCRF-supported research-based solutions and technological innovations enables stakeholders in LMICs to make progress at scale towards addressing complex development challenges. These efforts will contribute to the achievement of the SDGs, enhancing people's wellbeing, improving equality for people of all genders, promoting social inclusion, economic development and environmental sustainability in developing countries. These improvements will be sustained into the future by enduring equitable research and innovation partnerships between the UK and LMICs, and enhanced capabilities for challenge-oriented research and innovation in all regions.'*

The GRCF strategy sets out three objectives to support this impact:<sup>16</sup>

- Promote challenge-led disciplinary and interdisciplinary research, including the participation of researchers who may not previously have considered the applicability of their work to development issues.
- Strengthen capacity for research, innovation and knowledge exchange in the UK and developing countries through partnership with excellent UK research and researchers.
- Provide an agile response to emergencies where there is an urgent research need.

Through these objectives, GCRF aims to contribute to realising the ambitions of the UK aid strategy and to making practical progress on the global effort to address the United Nations' SDGs.<sup>17</sup> As a secondary objective, GCRF also aims to build the position and role of the UK R&I sector as global leaders in addressing global development challenges.

In its strategy, GCRF uses a set of challenge areas, based on the SDGs, to provide an overarching framework for R&I and international development to come together in a new way to contribute to the achievement of the SDGs.

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<sup>16</sup> BEIS, 2017. Global Challenges Research Fund (GCRF): How the Fund Works. Available at: <https://www.gov.uk/government/publications/global-challenges-research-fund/global-challenges-research-fund-gcrf-how-the-fund-works#:~:text=GCRF%20forms%20part%20of%20the,the%20poorest%20people%20and%20countries>

BEIS, 2017. UK Strategy for the Global Challenges Research Fund (GCRF). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf)

<sup>17</sup> Available at: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

## 1.3 GCRF's evaluation

**The purpose of GCRF's evaluation is to assess the extent to which GCRF has contributed to its objectives and impact.** This has a dual learning and accountability purpose, as clearly set out in the evaluation objectives:

- To assess whether the fund is achieving its aims (*accountability and learning*).
- To assess whether it is on course to achieve impact (*accountability*).
- To support BEIS in their development of a cross-fund and fund-specific Key Performance Indicator (KPI) framework to provide a robust measure of the funds impact and Value for Money (VfM) (*learning and accountability*).
- To provide evidence of what works and make interim assessments of VfM to feed into GCRF learning loops to improve the fund while it is in operation (*learning and accountability*).
- To inform the design of a VfM case for future funds (*learning*).

As the evaluation has both accountability and learning functions, it will provide evidence of GCRF's contribution towards impact and engage with BEIS's developing processes for learning about aid effectiveness.

**Given the complexity of the fund, the evaluation is designed in three stages from 2020–24.** The evaluation design was developed under the earlier Foundation Stage evaluation carried out in 2017–18.<sup>18</sup> It addresses the purpose through five MEQs and a three-stage design that tracks GCRF's (ToC) from activities to impact over five years. Each stage applies specific modules to focus on different aspects of the ToC and the fund. Stage 1a of the evaluation runs from May 2020 to February 2021, and took place when GCRF was in the final year of its first five-year phase.

The first, Stage 1a, consists of four modules conducted in parallel that aim to understand how BEIS and GCRF's DPs manage and position the fund to deliver on its intended aims and commitments. These four modules focus on GCRF's management, relevance and coherence, fairness, and the integration of gender, social inclusion and poverty (GESIP) in the fund's commissioning and processes. **Each of these modules assesses an essential foundational prerequisite for achieving development impact**, depicted in the GCRF ToC.<sup>19</sup> For example, the focus on the quality of partnerships with stakeholders in the Global South is important, not only because it is a fairer way of working but also because equitable partnerships are key to designing research that is relevant to the context and engaged with local stakeholders, and that builds the local R&I ecosystem, thus enhancing its impact potential. Similarly, research that is gender-sensitive, inclusive and focused on poverty alleviation in its design, process and

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<sup>18</sup> GCRF, 2018. GCRF Evaluation Foundation Stage. Available at:

<https://www.gov.uk/government/publications/global-challenges-research-fund-gcrf-foundation-stage-evaluation>

<sup>19</sup> Ibid.

stakeholder engagement is building foundations for positive contributions to development outcomes.<sup>20</sup>

The modules are described in more detail in section 4.1.

This **synthesis report** brings together the findings of these three modules to provide an in-depth view of how GCRF works as a fund across these dimensions, where it is working well and where it could be improved. The synthesis answers the Stage 1a MEQ and a specific synthesis question:

- MEQ 1: Is the GCRF relevant, coherent, well-targeted, fair, gender-sensitive, socially inclusive and well-managed?

In this synthesis we have unpacked the MEQ to consider not only whether GCRF is achieving these things but also how and why progress has (or has not) been made. Exploring the dynamics, constraints and risks are useful questions to support learning.

In addition, the synthesis takes an appreciative lens. We have, therefore, not just considered whether this is happening (or not), but also the opportunities to build on, going forward. Again, this is to support learning and the forward-looking focus of the evaluation.

Therefore, we have framed our conclusions arising from the synthesis analysis using the following questions:

- How and why has GCRF progressed (or not) in building the foundations for achieving its strategic aims to promote challenge-led, interdisciplinary research with development impact?
- Where are the opportunities for improvement?

## 1.4 Strategic and policy context in 2020–21

**Throughout the first year of the evaluation there have been significant changes in the strategic, policy and economic context of GCRF, including deep budget cuts for 2021–22 as a result of a reduction in the UK’s ODA commitment due to the Covid-19 pandemic, the implications of which are still emerging.**

Published in March 2021, the Integrated Review of Security, Defence, Development and Foreign Policy sets out the UK vision for 2030. This will guide the work of the new Foreign, Commonwealth and Development Office (FCDO) formed in August 2020 by merging the Foreign and Commonwealth Office (FCO) and the Department for International Development (DFID). The new FCDO now has the task of integrating diplomacy and development to deliver the UK’s objectives overseas.

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<sup>20</sup> Ibid.



The Integrated Review states an increased commitment to security and resilience in the context of UK national interests in collaboration with other nations, with a particular focus on multilateral solutions. The review has an explicit focus on defence, homeland security and the application of science and technology to grow the UK's cyber power. It does not focus in detail on international development, which will be included in a new stand-alone strategy to be published at a later date. As the outcome for the Integrated Review, Her Majesty's Government (HMG) have set out a new strategic framework that outlines the government's national security and international policy objectives and has been used to guide the Spending Review. It includes four dimensions: sustaining strategic advantage through science and technology; shaping the open international order of the future; strengthening security and defence at home and overseas; and building resilience at home and overseas.

Science and technology are central to achieving the policy objectives, with a focus on emerging technologies in particular and the translation of innovation into practical applications. The national Research and Development (R&D) roadmap outlines that public 'spending continues to support discovery research [...] applied research, development and implementation'.<sup>21</sup> ODA will continue 'to support R&D partnerships within developing countries sharing research expertise in support of the SDGs',<sup>22</sup> with Science and Technology remaining one of the UK's strategic priorities for ODA spending.<sup>23</sup>

**Alongside new structures and policies, the Covid-19 pandemic has significantly impacted on ODA spending and management, with resulting deep cuts to the GCRF budget in 2021–22.** The economic recession and resultant fiscal policies have affected the Spending Review that was carried out in autumn 2020, limited to a one-year timeframe and featuring a reduction in the ODA commitment from 0.7% to 0.5 % of gross national income (GNI). While the Integrated Review commits to 'spend 0.7% of GNI on development when the fiscal situation allows',<sup>24</sup> challenging decisions have been and continue to be made by HMG in relation to the spending cuts, impacting on government departments – including BEIS – and resulting in spending cuts to GCRF.

On 11 March 2021 UKRI stated that the BEIS ODA allocation to UKRI 'has reduced significantly in planned ODA expenditure for FY21/22, leading to a £125m budget and a £120m gap between allocations and commitments'.<sup>25</sup> The implementation of these sudden budget reductions, which amount to around 70% of committed spend, affect all GCRF's delivery partners and investments across the board, with grants being delayed, re-profiled or,

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<sup>21</sup> HMG, 2021. Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy. CP 403, March 2021, p.36.

<sup>22</sup> Ibid., p.37.

<sup>23</sup> Ibid., p.46.

<sup>24</sup> Ibid., p.5.

<sup>25</sup> Smith, L. and Ward, M., 2021. The Future of Research and Development Funding. House of Commons Library. Available at: <https://commonslibrary.parliament.uk/research-briefings/cdp-2021-0035/>



in many cases, terminated. UKRI, as the largest DP involved in GCRF, says it will be unable to provide GCRF funding beyond July 2021.<sup>26</sup>

Although GCRF is at the end of its first phase, many awards were designed to continue into the next phase and will be curtailed by the budget cuts. This has far-reaching implications for the fund's strategy and ambitions for development impact at scale, as well as the evaluation. Beyond the impacts on BEIS and GCRF specifically, Covid-19 has had an impact on UK research institutions and, especially, universities, both in terms of budgets and capability. This will not only affect the delivery of the evaluation but also change the strategic context where the purpose of GCRF may be modified.

Taken together, this shifting context is likely to have significant impacts on GCRF's strategic role, funding and objectives during the evaluation period. The evaluation is sufficiently flexible to explore these effects through its stages and modules. We consider some of these potential impacts and implications in the final section of this report.

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<sup>26</sup> Smith, C., 2021. UKRI Official Development Assistance Letter 11 March 2021. Available at: <https://www.ukri.org/our-work/ukri-oda-letter-11-march-2021/>

## 2. Methodology

*The synthesis report combines findings from the three module reports, using qualitative analysis techniques. An update of the portfolio analysis using quantitative data science analysis is also included in the report.*

### Summary:

- The evaluation *as a whole* is a theory-based evaluation (TBE) design, using the GCRF ToC as the framework.
- To meet the different evaluation purposes, the evaluation is implemented in three stages that track sequentially along the ToC at each stage, over five years, using a modular approach at each stage.
- Each stage addresses a separate MEQ, moving from activities to outcomes along the ToC. At each stage, individual modules ‘zoom in’ on specific aspects of the GCRF ToC, complemented by cross-module reflection that ‘zooms out’ in order to look holistically at the modules and ToC and answer the MEQ.
- Stage 1a has four modules that ‘zoom in’ on specific initial preconditions and assumptions in the ToC - this inception report focuses on Stage 1a.
- Stage 1a modules take a mixed methods approach, combining quantitative data analysis about the GCRF portfolio, drawing on proposal and awards documentation, publications and other outputs using data science techniques, with qualitative mini-case studies of programmes and awards.
- The Stage 1a synthesis analysis combines the three modules and analyses progress with reference to the GCRF ToC to provide a holistic view of progress.

### 2.1 Overview of approach

#### 2.1.1 Evaluation design

To meet its purpose and objectives, the evaluation of GCRF takes an overarching TBE design that is built around GCRF’s ToC, developed in the Foundation Stage evaluation.<sup>27</sup> The GCRF ToC diagram is in Annex 3. Given the complexity of the fund and different evaluation purposes, the Foundation Stage evaluation strategy analysed the challenges facing the GCRF evaluation.

The types of evaluation question, the demand for findings at different times for different uses, the range of methods within the design, and the scale of the evaluation mean that no single

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<sup>27</sup> GCRF, 2018. GCRF Evaluation Foundation Stage.

method or approach will address the requirements of the GCRF evaluation – a multi-method and multi-module design is required.

The nature of GCRF and the aspects being evaluated dictates that there are certain sets of approaches which will be more relevant and feasible to application in some areas of GCRF than others.<sup>28</sup>

Therefore, the Foundation Stage evaluation proposed a staged, hybrid approach within the TBE design, making use of a range of modules and methods. In this approach, the evaluation is implemented in three stages that track sequentially along the ToC, implemented over five years from 2020-25. Each stage addresses a separate MEQ, moving from activities to outcomes along the ToC, using a modular approach at each stage.

At each stage, individual modules ‘zoom in’ on specific aspects of the GCRF ToC, complemented by cross-module reflections that ‘zoom out’ in order to look holistically at the ToC, and answer the MEQ. Stage 1a assess the preconditions and assumptions in the activity part of the ToC, Stage 1b will examine the ‘signature’ large investments in GCRF, and how these are promoting results and outcomes as proposed in the ToC, with an overall assessment of results and positioning for outcomes<sup>29</sup>. Stage 2 will look at the extent to which R&I is translating into outcomes and contributing to outcomes at scale. Stage 2 will be fully aligned to a TBE approach, drawing on mid-level theories about how R&I promotes development outcomes to understand GCRF’s contributions. Stage 3 (not commissioned yet) assesses GCRF’s overall contribution to outcomes at scale in LMICs and SDG-level impact, using the ToC and mid-level theories to make these judgements.

### 2.1.2 Summary of the Stage 1a methodology (April 2020 to March 2021)

This stage is about answering MEQ 1: *Is GCRF relevant, well-targeted, fair, gender-sensitive, socially inclusive and well-managed?*

The MEQ was revised in the inception phase in order to update the original question suggested in the Foundation Stage evaluation in 2018 to reflect the CGRF context in 2020.<sup>30</sup>

Stage 1a aims to understand whether GCRF is focused on creating the preconditions for outcomes and impact, as described in the ToC. As discussed, four modules were implemented in Stage 1a,<sup>31</sup> and three were combined into this synthesis report. The three technical reports are provided as annexes, with extensive methodologies provided for each.

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<sup>28</sup> Ibid., p.C24.

<sup>29</sup> Signature investments are strategic initiatives that represent the ‘essence’ of what GCRF was set up to achieve – ODA research and innovation (R&I) excellence and development impact. They include large programmes such as Interdisciplinary Hubs, GROW, FLAIR, and IPP among others.

<sup>30</sup> For details of all evaluation questions and their revisions, please see the Inception Report for the evaluation.

<sup>31</sup> The ITT originally set out five modules to complete in this period. In the proposal, we have combined two modules into one gender, poverty and social inclusion module for efficiency and depth, giving a total of four modules to be delivered in Stage 1a.

Through these modules, Stage 1a provides a check on whether the early assumptions in the ToC hold, as the basis for future assessments of GCRF's outcomes and impact. In particular, this analysis focuses on the 'Activity to Results' assumptions in the ToC, which are as follows:

- Evidence of interest/demand for solutions from in-country stakeholders
- Sufficient appetite and capacity in UK to work in a challenge-oriented way
- Sufficient appetite and capacity in LMICs to participate in GCRF
- Researchers, innovators and LMIC partners have the expertise to map the landscape and co-identify priorities and research issues
- Researchers, innovators, and LMIC partners have expertise to mobilise coalitions for uptake and replication in LMICs
- Gender and social inclusion can be designed into R&I for inclusive impacts
- Learning feeds back into commissioning (this is a feedback loop between results and activities rather than an assumption)

We recognise that a well-targeted, well-managed GCRF is a key prerequisite for achieving impact, but that HMG funds of this scale evolve and require adaptive management. We understand adaptive management to be an intentional approach to making decisions and adjustments in intervention design and implementation in response to new information on the effects of interventions and changes in context based on intentional learning.<sup>32</sup> Adaptive management can happen at the fund or challenge level – hence the key ToC assumption about learning feeding back into commissioning.

The evaluation team has reflected the aim of supporting adaptive management by taking a formative and appreciative look in line with the evolution of GCRF's strategy. This has produced an in-depth view of how GCRF works as a fund, where it is working well and where it could be improved, generating learning for the GCRF stakeholders to enable course correction, and for the evaluation team to inform their assessments and judgements.

Each module developed a further set of sub-questions to address, which are reflected in the high-level evaluation matrix, along with an overview of the data collection and analysis approaches (Table 1). The detailed module methods and specific findings are set out in the individual technical reports annexed to this report.

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<sup>32</sup> Adaptive management is a well-established approach in development programming, aiming to improve the impact and effectiveness of interventions. See for example, FCDO's programme Global Learning for Adaptive Management (GLAM), available at <https://devtracker.fcdo.gov.uk/projects/GB-1-205148> and the US Agency for International Development's (USAID's) Learning Lab briefing note on Adaptive Management, available at <https://usaidearninglab.org/lab-notes/what-adaptive-management-0>

**Table 1: Stage 1a High-level evaluation matrix**

MEQs and evaluation criteria	Modules	Data collection methods in modules	Data analysis approach
<p>MEQ 1: Is GCRF relevant, coherent, well-targeted, fair, gender-sensitive, socially inclusive and well-managed? (<i>Relevance, Coherence, Efficiency, Equity</i>)</p> <p><b>Sub-questions:</b></p> <p>1.1 To what extent has GCRF developed an internally coherent and consistent suite of programmes to address the global challenges?</p> <p>1.2 To what extent and why is the GCRF portfolio coherent with, aligned to and coordinated with other global, regional and national efforts to achieve the SDGs and address development challenges? [Coherence question]</p> <p>1.3 To what extent and why are GCRF and its components consistent with and responsive to target groups' needs, SDG priorities and partners' and funders'/donors' policies (global, regional, national and sub-national)? In essence, is GCRF funding the right things? [Relevance question]</p>	<p>Management Review</p> <p>Relevance Assessment</p> <p>Research Fairness Assessment</p> <p>GESIP</p>	<p><b>Document reviews:</b></p> <p><i>GCRF documents (strategy, policy, others).</i></p> <p><i>Award holders' proposals and monitoring reports.</i></p> <p><i>National policy/strategy documents (selected countries).</i></p> <p><i>BEIS Tracker and financial data.</i></p> <p><b>Data science on curated GCRF databases drawing from:</b></p> <p><i>Dimensions.</i></p> <p><i>Gateway to Research.</i></p> <p><i>ResearchFish.</i></p> <p><i>Curated database from DP grant management systems.</i></p>	<p>All modules where applicable:</p> <ol style="list-style-type: none"> <li><b>Data science analysis, high-level.</b> Using GCRF-specific search terms to locate and link GCRF awards and curate a database of GCRF countries, institutions, investigators, themes.</li> <li><b>Data science analysis per module.</b> Within each module we will map the GCRF research landscape and apply topic modelling techniques, using module-specific search terms and natural language processing.</li> <li><b>Management process mapping</b> analysed using rubrics and module audit criteria.</li> <li><b>Programme and award levels.</b> Document and KII data analysed through mini-</li> </ol>

MEQs and evaluation criteria	Modules	Data collection methods in modules	Data analysis approach
<p>1.4 To what extent have considerations of fairness<sup>33</sup> been reflected in GCRF strategy, agenda-setting, vision, and decision-making structures; partnerships; in relation to opportunities, process and sharing of benefits? [summarised]</p> <p>1.5 How can gender equality mainstreaming be strengthened throughout the fund?</p> <p>1.6 How effectively is poverty framed and understood within the GCRF ecosystem?</p> <p>1.7 How well is the selection, implementation and oversight of awards and programmes being managed?</p> <p>1.8 How can the relevance, coherence, fairness, targeting, gender sensitivity, social inclusion and management of GCRF be improved?</p> <p>1.9 How effectively is social inclusion framed and understood within the GCRF ecosystem?</p>		<p><b>Key informant interviews (KIIs)</b><sup>34</sup>:</p> <p><i>BEIS fund management staff.</i></p> <p><i>DP programme staff.</i></p> <p><i>Funding panel members.</i></p> <p><i>Award holders and LMIC partners' staff.</i></p> <p><i>Regional and national institutions – policy, R&amp;I, enterprise.</i></p> <p><i>Comparator R&amp;I funds</i><sup>35</sup> – <i>HMG, international staff.</i></p>	<p>case studies and case study clusters, using rubrics, with cross-case analysis via module audit criteria.</p> <p>5. <b>Documents</b> reviewed and coded in MaxQDA using rubrics and module audit criteria.</p> <p>6. <b>Interview transcripts</b> coded in MaxQDA using same coding frames as documents.</p> <p>7. <b>Overall relevance/targeting analysis</b>, using rubrics and comparative analysis, within the overarching frame of the ToC preconditions and assumptions.</p>

<sup>33</sup> Please see the Executive Summary for definitions of research fairness, gender equality, social inclusion and poverty.

<sup>34</sup> Please refer to Table 2, Annex 1

<sup>35</sup> The Management Review included the following comparator funds: Conflict, Security and Stability Fund (CSSF) (UK); Fund for International Collaboration (FIC) (UK); Strategic Priorities Fund (SPF) (UK); International Development Research Centre (IDRC) (Canada); NORHED (Norway); Swiss Programme for Research on Global Issues for Development (r4d) (Switzerland)

### 2.1.3 Summary of the data science approach

We used quantitative data science approaches to analyse GCRF's awards and their associated publications, patents and policy outputs, among others, in order to identify broad trends and patterns about the portfolio and how it has been performing, in LMICs and globally. Our partner, Digital Science, manages a large database of linked scholarly information, Dimensions – one of the most comprehensive in global research.<sup>36</sup> Dimensions offers a comprehensive collection of linked data in a single platform, from grants, publications, datasets and clinical trials to patents and policy documents. The database links publications and citations, investigators and their institutions with i) related grants and supporting funders, ii) article metrics and iii) the related patents, clinical trials, policy documents, and datasets, to deliver a holistic view of the research landscape<sup>37</sup>.

During inception, we curated and developed the GCRF dataset by:

- Locating publications and other outputs from GCRF awards in Dimensions, matching the GCRF grants reported by BEIS to grants in Dimensions via their grant number.
- Drawing on GCRF project information from Gateway to Research and ResearchFish to combine with the Dimensions analysis.
- Aggregating information provided by DPs in a range of different formats summarising their portfolio.

For more information about the approach to curating the dataset please see then technical note in Annex 4.

Just over 5,000 awards were identified based on these sources of data and used for analysis.

One of the techniques we have used with this dataset is topic modelling. This is an innovative data science technique that draws a range of informative interpretations from a large text corpus. Topics are different to themes or categories; they represent the words that appear together in documents, which are then processed, weighted and analysed with reference to natural language to produce a rich semantic and conceptual analysis of the documents in the corpus.

We have analysed topics in the dataset relating to GCRF to draw out information about coverage of SDGs, GCRF challenge areas and more specific information about how gender, poverty and social inclusion are integrated into grants and publications.

In addition to topic modelling, we also analysed additional information on the awards and the publications associated with them to inform the modules conducted in stage 1a. In particular:

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<sup>36</sup> Website: <https://www.dimensions.ai>

<sup>37</sup> This is the database used, and the dataset that we have curated for this analysis, yet there are other approaches and databases available. Each database will have a different dataset and alternatives include Scopus and Web of Science. DevPubMetric provides alternative measures of research outputs. Available at: <https://www.pvgglobal.uk/activity/devpubmetric/>



we looked at the range and nature of different outputs from the GCRF portfolio; and we analysed the role of Southern partners in awards, assessing where they were named as co-investigators and where publications resulting from GCRF awards were co-authored by individuals based at LMIC institutions.

This analysis was conducted based on the data sourced from Dimensions and Gateway to Research only and therefore probably has more partial coverage of some parts of the portfolio not covered in Gateway to Research. We also note there are additional limitations of the analysis due to the quality, completeness and structure of information provided to us by DPs – the format varied significantly and was more detailed in some cases than others, and much of it is based on self-reported data from awards holders – and due to the data collection point, with most of the analysis conducted on information collected at the proposal stage, which may, therefore, not accurately reflect how awards were implemented in practice.

### 2.1.4 Summary of synthesis approach

The aim of the Stage 1a synthesis process is to produce a synthesis report on relevance, fairness, gender equality, social inclusion and poverty, to produce overarching insights from the specific and interlinked findings in the report.

#### **Approach and method**

The Stage 1a synthesis used a variant of a thematic analysis approach, a framework analysis.<sup>38</sup> Thematic analysis is a systematic method for identifying, analysing and reporting patterns (themes) within qualitative data.

#### **Data sources**

The main data sources for the synthesis were qualitative, drawn from the module reports from Stage 1a – the Relevance, Fairness and GESIP modules. The total evidence base derived from the three module assessments is detailed in Annex 1. The report also discusses the updated broad trends from the data science findings, making links to the themes identified through the qualitative analysis, but this data is not incorporated into the synthesis process.

#### **Conceptual framing**

The module reports have been interpreted according to the GCRF ToC and insights from the research and innovation for development field, which indicate the policies, behaviours, structures and processes that need to be in place for research to contribute to tangible development outcomes.<sup>39</sup>

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<sup>38</sup> Gale et al., 2013; Braun and Clarke, 2006

<sup>39</sup> GCRF, 2018. GCRF Evaluation Foundation Stage. Available at: <https://www.gov.uk/government/publications/global-challenges-research-fund-gcrf-foundation-stage-evaluation>; also Ofir, Z., Schwandt, T., Duggan, C. and McLean, R., 2016. Research Quality Plus [RQ+]: A Holistic Approach to Evaluating Research. IDRC. Available at: <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/56528/IDL-56528.pdf?sequence=2&isAllowed=y>



These include:

- the need for meaningful engagement and understanding of the development problem, and central focus on poverty, gender and inclusion in the research design and implementation process as the foundation for development impact.
- authentic, equitable partnerships with R&I partners in the Global South.
- meaningful collaboration with stakeholders in LMIC contexts who will take up the results and products and apply them in pursuit of development outcomes in their settings and countries.

### Steps followed

The synthesis approach followed these steps to ensure a systematic, rigorous qualitative analysis:

**Step 1: Familiarisation:** Three core team members reviewed all three reports and familiarised themselves with the data: mainly the reports, but also some of the award-level write-ups as required.

Notes were made on potential themes identified in this first round to inform coding, and clarifications raised with the original evaluators/authors of the module reports.

**Step 2: Generating an initial structural coding framework:** After the initial reading, the team generated an initial coding framework, based on the GCRF ToC, evaluation questions and broad areas of interest, e.g. strategy, process, monitoring, evaluation and learning. MaxQDA software was used for the management of the coding process.

**Step 3: Iterative coding:** Three core team members coded two reports each and reviewed the coded data and emerging themes.

Where there were differences in the coding, we reviewed the themes and discussed differences and interpretation against our original framework. To reconcile differences, we dug deeper into cause and effect links by applying a problem tree analysis,<sup>40</sup> which provides a holistic frame for exploring cause and effect around an issue. From this process, some new broader themes were identified, and codes were consolidated into these. The broader themes were then tested and refined through a second round of coding, and where relevant we derived sub-themes to reflect different dimensions within each theme. The module reports brought different perspectives from fairness, GESIP and relevance, often contributing complementary insights on slightly different aspects, but with broad alignment in their findings. For example, GESIP had an explicit focus on monitoring, evaluation and learning (MEL) systems which fairness and relevance did not, yet insights from the latter reports identified common issues relating to reporting and MEL, which complemented the findings of GESIP.

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<sup>40</sup> Wageningen University & Research [n.d.]. Problem Tree. Wageningen University. Available at: <http://www.mspguide.org/tool/problem-tree>

**Step 4: Interpretation workshop:** Three core team members, along with the Project Director, discussed the coded data and refined the themes and sub-themes to arrive at agreed interpretations.

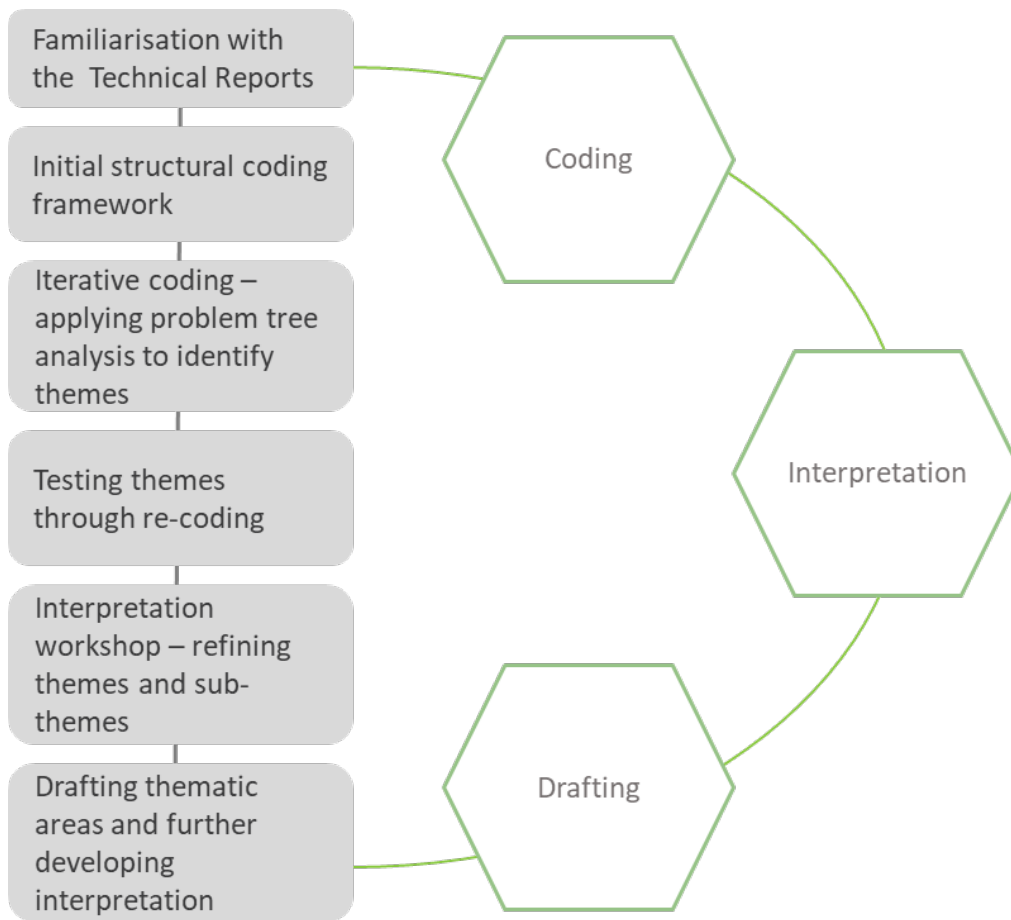
The workshop process followed a systematic approach and applied specific analytical techniques to explore, challenge and consolidate the initial set of themes and findings (drawing on steps from meta-ethnography, Noblit and Hare, 1988), e.g.:

1. **Determining how evidence is related:** identifying points of comparison or opposition within the reports and case studies, and identifying ‘lines of argument’ – inferences that cut across cases – through ‘comparing and sorting interpretations, examining similarities and differences, and then integrating or framing these within a new interpretation’ that applies across cases (Pope et al., 2007).
2. **Translation:** periodically revisiting the module reports and underlying data to attempt to ‘translate’ evolving concepts or themes back into the source data, checking to see how far they accurately reflected case study findings, and scrutinising conceptual differences.
3. **Juxtaposing** insights from one report to make sense of a pattern noted in another.
4. **Reconciling** contradictory insights through unearthing differences that might lead to different outcomes.
5. **Adjudicating** between contradictory findings from the reports to identify strengths and weaknesses in the original conclusions, and the strength of the underpinning evidence.

**Step 5: Drafting:** Each core team member took a high-level thematic area (e.g. strategy) and wrote up the related subset of themes, developing the interpretation further. The subsections were then reviewed and agreed by the core team and integrated into the report. At this stage, conclusions and recommendations were developed and agreed by the core team.

Figure 2 illustrates the iterative synthesis process. The evidence base for the synthesis, the coding framework and the mapping of the supporting evidence for the synthesis findings can be found in Annexes 1 and 3.

**Figure 2: The framework synthesis process**



## 2.2 Strengths and limitations

Like all evaluations, the approach has both strengths and limitations, shaped around resourcing and timeframes, on which we reflect below.

**A global pandemic:** This evaluation is set in the context of a changing political and economic landscape, including the onset of Covid-19 at the start of the evaluation inception phase. Our approach had to change from the outset in line with the changing context and in response to DP, award holder and wider award adjustments, and people’s availability and constraints. The resultant design change reduced the timeframe for data collection with DPs and award holders to a short period between mid-October 2020 and early January 2021. This compressed data collection phase limited and intensified our engagement with award holders. Overall we achieved a sample of 89 awards (from a sample of 97 awards approved by BEIS and DPs<sup>41</sup>), yet to minimise the burden on award holders we combined some interviews to explore issues across two or three modules, which reduced the depth of focus on any one aspect of development impact.

<sup>41</sup> Selected using purposive sampling (outlined in the following sections)

**Mixed methods:** Our approach includes a broad but light-touch analysis of the portfolio using data science techniques, as well as in-depth insights derived from the qualitative deep dives through each module, reflecting on different aspects required to achieve development impact.

- While **data science analysis** is unable to provide insights into causal mechanisms or explanations for the patterns seen, it does offer an overview of the portfolio as a whole. In such a large fund, this bird's-eye view is essential in order to gain perspective on key clusters around distributions of funding, geographies and topics. This portfolio-wide view has highlighted important considerations that we used to refine our approach to sampling at the outset of the qualitative deep dives, as well as in drawing together the synthesis findings and reflecting on overall patterns. Such an analysis is limited by the data and the supporting data reporting systems available across the fund. In the case of GCRF, these reporting systems are heterogeneous across DPs, as these are different organisations. This means that there are inconsistencies in what data is captured within each system, leading to inconsistencies in data capture around some aspects of the fund (for example, see evidence of inconsistent reporting on gender equality, social inclusion and poverty in the GESIP module report). The data is incomplete and varied across DPs, yet this represents a starting point from which GRCF can build and improve coverage and consistency.
- The **deep dive case studies** purposively sampled GCRF, exploring different fundamentals of development impact in depth. However, the size and diversity of the fund means that any sample will not be representative or generalisable. We developed the strategy for sampling with BEIS, and included a 'common sample' approach to draw the three lenses – relevance and coherence, GESIP, fairness – together around a common set of awards, as well as purposive sampling for each award based around where the most could be learned. The aim of this approach was to maximise learning around what is working (or not) within the fund, to enable improvement. Tools for each award included document reviews and KIIs, topic modelling using key words for each module, and a broader contextual analysis for relevance and coherence.
- Each module developed **rubrics**<sup>42</sup> to enable systematic comparison across awards, drawing on established frameworks to build a picture of how well-established the thinking is on each of the foundations of development impact. Additionally, each module built in a **strength of evidence** judgement to clearly indicate any limitations in the evidence.

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<sup>42</sup> 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. Rubrics have often been used in education for grading student work, and in recent years have been applied in evaluation to make transparent the process of synthesising evidence into an overall evaluative judgement. Rubrics were developed for each GCRF evaluation module to describe a range of performance criteria and progression ratings, and applied to each award in the sample to arrive at a performance judgement.

**A foundation for later stages:** while there are limitations in coverage across the portfolio, in data availability and in the representativeness of deep dives, this evaluation is designed to build on these foundations in later stages. The evaluation is designed to build up a picture, moving along the ToC with each stage, starting here with the activities to outputs, with a view to establishing whether the foundations for achieving development impact are in place, and what is working (and what is not) to enable learning and improvement of the fund management over time. Subsequent stages of the evaluation build from this, to explore processes in the evaluation of signature investments 2021–22 and later results 2022–25. Each stage builds the evidence base towards a more holistic view of the fund by the end of the evaluation.

### 3. Portfolio overview

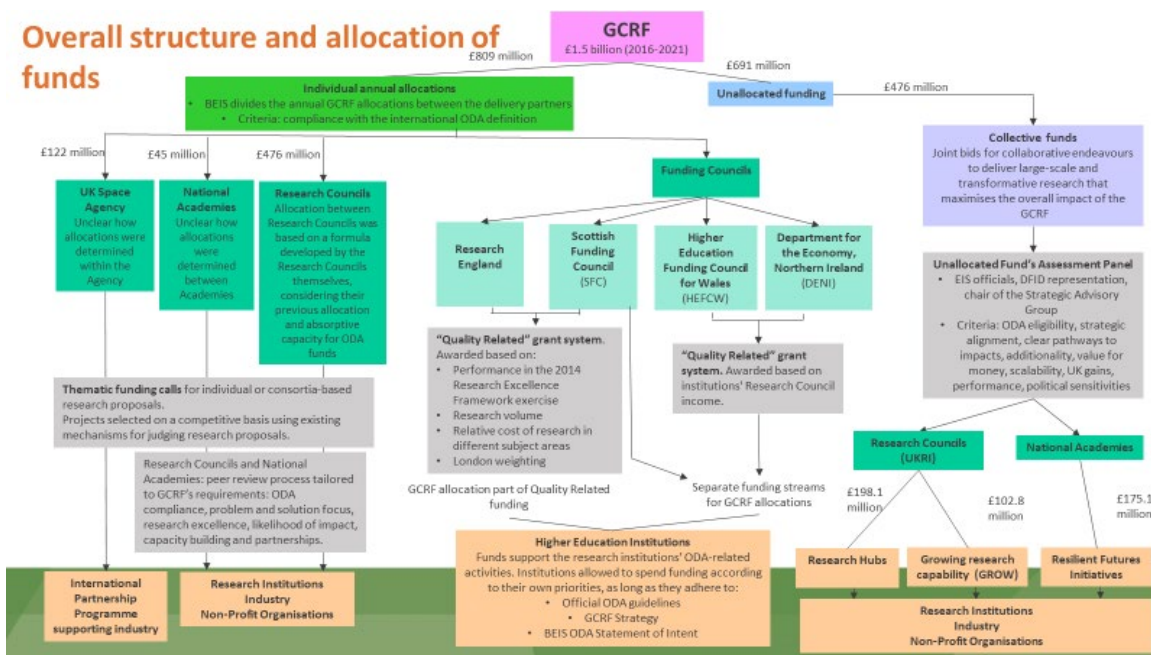
GCRF is a complex and diverse fund which resists simple characterisation. Despite this, we can discern some overall trends. The portfolio produces a diverse range of outputs beyond publications and is multidisciplinary and international in nature; however, GCRF funding benefits primarily middle-income countries.

#### 3.1 GCRF funding, distribution and interdisciplinarity of research

As set out below, GCRF funding is distributed through a set of 17 DPs<sup>43</sup> which are responsible for disbursing that funding through a range of funding programmes, schemes and calls which award grants for R&I activities to the UK R&I community and their international partners.

The overall structure and allocation of funds across GCRF encompasses many levels, organisations and cultures, and is summarised in Figure 3.

Figure 3: Overall structure and allocation of funds across GCRF <sup>44</sup>



Source: Guthrie et al., 2021

<sup>43</sup> The 17 Delivery Partners for GCRF include: UKRI (Arts and Humanities research Council, Biotechnology and Biological Sciences Research Council, Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical research Council, Natural Environment Research Council, Science and Technology Facilities Council, and Innovate UK and Research England); Scottish Funding Council, Higher Education Funding Council for Wales; Department for the Economy Northern Ireland; British Academy; Royal academy; Royal Academy of Engineering; UK Space Agency.

<sup>44</sup> Innovate UK started GCRF funding under GCRF in 2019. They form part of UKRI's portfolio, represented as part of the Research Councils grouping

In the evaluation inception report we set out a detailed portfolio analysis summarising the division of funding across these DPs and across a range of other aspects – such as the challenge areas, countries of focus, and funding type – as well as an analysis of GCRF’s publication output.<sup>45</sup> In addition, we have conducted an analysis of the GCRF portfolio using a topic modelling approach. Topic modelling is an innovative, data-driven technique that can draw a range of informative interpretations from a large text corpus. Topics are different from themes or categories: they represent the words that appear together in documents, which are then processed, weighted and analysed with reference to natural language to produce a rich semantic and conceptual analysis of the documents in the corpus.<sup>46</sup> The advantage of this method is that it is a bottom-up, text-based approach that can analyse large volumes of text, does not need a prerequisite framework, and so can identify meaningful patterns from within the corpus being analysed. It can help to identify broad and deep relationships and connections in how topics are used within and across texts, disciplinary and thematic boundaries, to provide a rich, landscape overview. Topic modelling presented here was conducted based on analysis of summaries of awards within the GCRF portfolio.<sup>47</sup>

This section summarises the key findings of these portfolio-level data analyses, updated to March 2021.

### **GCRF funding produces a diversity of outputs beyond academic publications**

The fund produces a broad, diverse range of outputs. Based on our Dimensions analysis<sup>48</sup> we have identified a total of 5,856 journal publications from the GCRF in the period 2016–2020.<sup>49</sup> In addition, from Gateway to Research data we are able to identify a variety of different types of outputs, though these are limited to a subset of the fund that reports via ResearchFish (UKRI and its partners): 20,352 different creative, policy and technology outputs.<sup>50</sup> These include policy citations, innovation outputs such as IP and spinouts, technology outputs such as databases and models, software and technical products, and creative outputs. The number of journal publications is not especially remarkable for a research fund of this size (with approximately 2000 awards, this crudely equates to just under three journal articles per award); rather, the 20,352 other outputs are where GCRF has the potential to add value, and

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<sup>45</sup> This analysis is based on the BEIS Quarterly Tracker, an Excel workbook completed manually by DPs every quarter with funding activity, descriptions and expenditure. As such, the analysis is subject to the quality and completeness of these data and, as such, should be considered to provide a broad overview of patterns and trends rather than a detailed robust analysis.

<sup>46</sup> Draux, H. and Szomszor, M., 2017. Topic Modelling of Research in the Arts and Humanities. An Analysis of AHRC Grant Applications. Digital Research Reports, November 2017. Available at: <https://www.digital-science.com/resources/digital-research-reports/topic-modelling-research-arts-humanities/>

<sup>47</sup> The content and detail of the summaries available varied by DP and programme depending on the extent and nature of the information available. For UKRI awards this analysis is based on the qualitative data available in Gateway to Research. For Research England this analysis is based on the information provided in Annex D of the institutional annual reporting. For other awards, typically these consist of an abstract sourced either directly from the DP or from the BEIS Tracker. Just over 5,000 awards (where awards may include specific allocations of QR funding within institutions) were included in this analysis.

<sup>48</sup> <https://www.dimensions.ai>

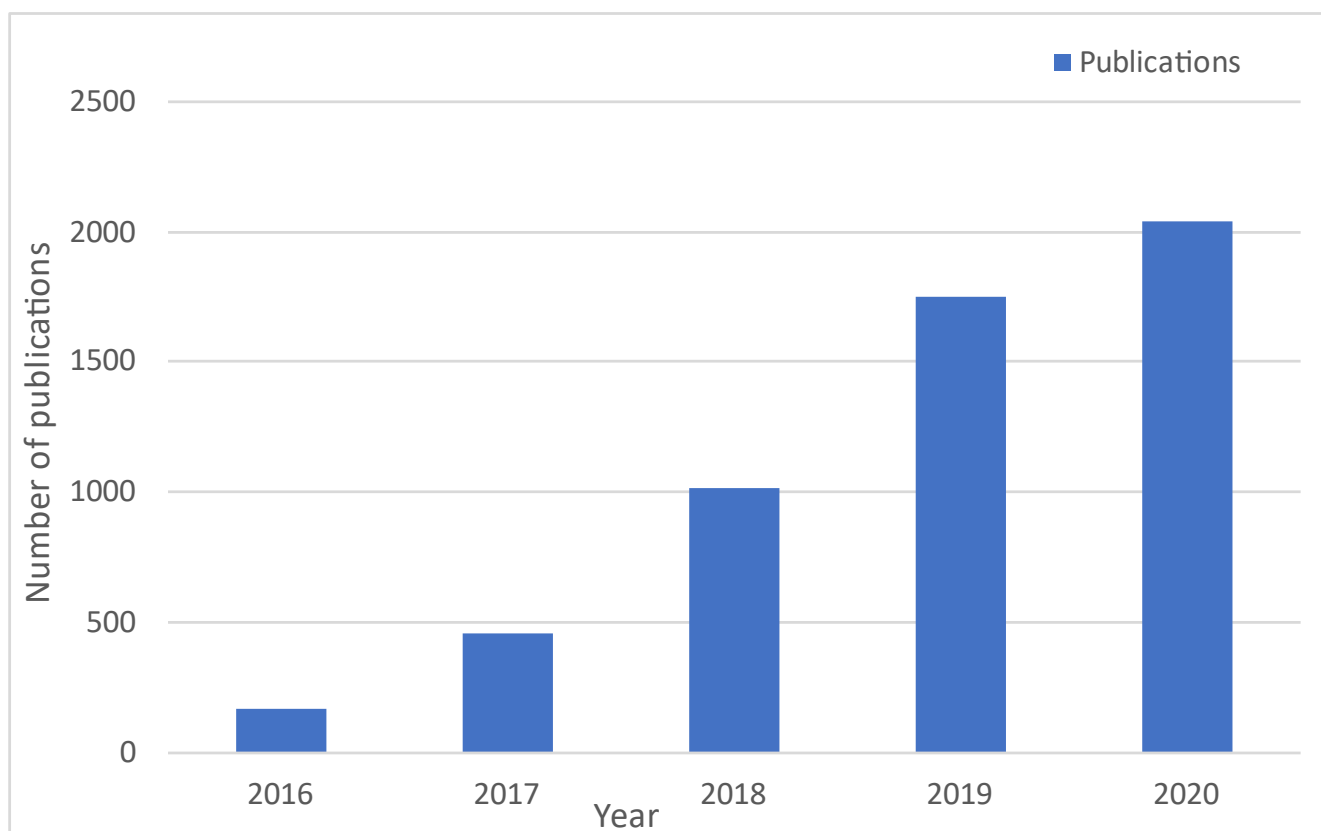
<sup>49</sup> There are a number of limitations and caveats to the data sets used, summarised on page 10 of this report, with a more detailed technical methodology set out in Annex 4. This analysis was carried out before the annual reporting cycle for ResearchFish, making 2020 data under-reported.

<sup>50</sup> Source: Gateway to Research. Snapshot as at 01 March 2021.



their use and influence requires further investigation. Outputs targeted to policy, innovation and business audiences as creative, technological and other products, are more likely to be accessed and positioned for use (i.e. not behind journal paywalls) by target user groups beyond academia. Take up and use by policy, practice and business stakeholders is necessary to realise the research uptake and development impacts envisaged by the fund. We also note that the number of publications resulting from GCRF (as identified in Dimensions) has grown significantly over time as awards have had time to evolve and produce new research findings (Figure 4). In 2020 2,037 publications a year were produced through GCRF-funded R&I (climbing from 1,751 in 2019).

**Figure 4: Number of publications from GCRF by year for the GCRF from 2016 to 2020.**



Source: Dimensions

### **GCRF funding primarily benefits middle-income countries**

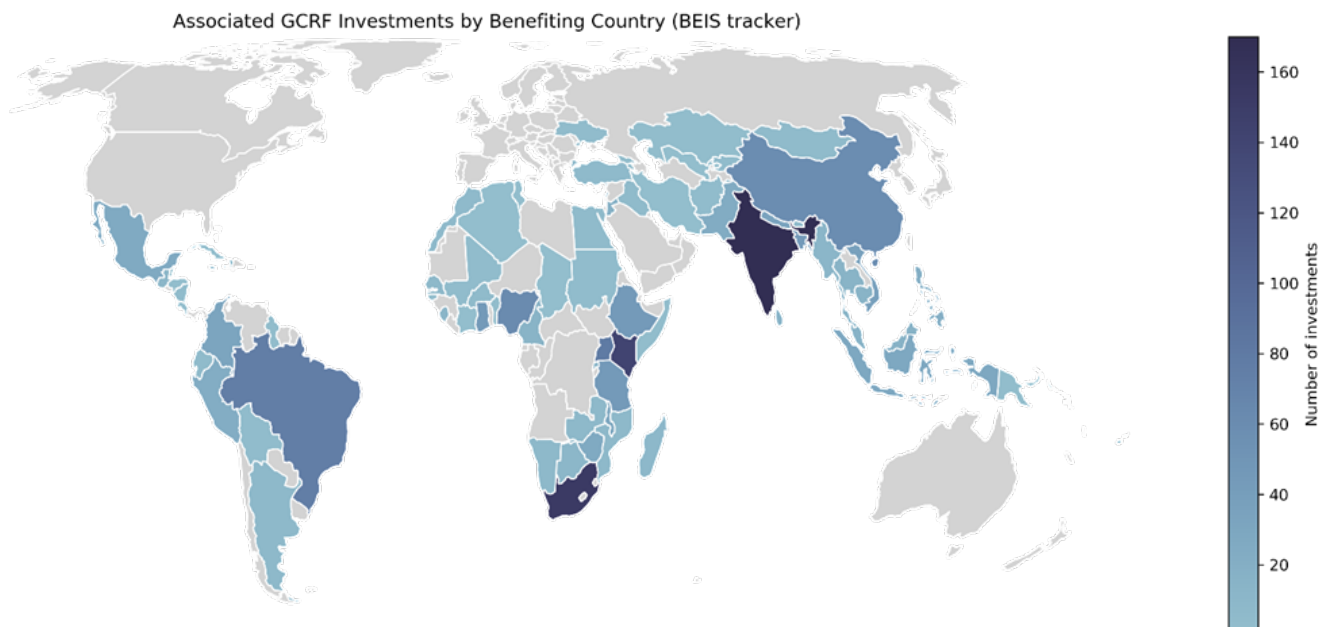
Data allows us to map awards by benefiting country.<sup>51</sup> The strongest pattern that can be observed is the concentration of funding benefiting middle-income countries, although there is a fairly wide spread of small-scale funding in low-income countries (Figure 5). Of the top 10 benefiting countries for GCRF funding, eight of these are middle-income countries (Figure 6).

<sup>51</sup> We note that the funding by country is based on the 'benefiting country' that was self-identified by researchers in their successful proposals. This makes the information under 'benefiting country' somewhat mixed. The country associated with the funding may reflect R&I activities actually taking place in the country, and/or it may reflect activities that are deemed to be relevant to that country's development challenges but are taking place elsewhere.



There is also a strong regional concentration of funding in Southern and East Africa, South Asia and, to a lesser extent, Latin America, led by Brazil.

**Figure 5: Associated GCRF number of investments by country. Source: BEIS Tracker, September 2020 (data on spend to date for Financial Year 2019–20).**<sup>52</sup>



**Figure 6: Top 10 countries benefiting from GCRF funding.**

Benefiting country	Funding in millions (GBP)
South Africa	27.81
Kenya	24.16
India	23.13
Brazil	16.16
Uganda	10.64
Tanzania	10.41
China	10.02
Vietnam	8.63
Fiji	8.01
Ethiopia	7.49

<sup>52</sup> Itad–BEIS, 2020. GCRF Annual Review: Pilot for Year 3 2019–2020.

Source: BEIS Tracker, September s2020 (data for financial year 2019–20)

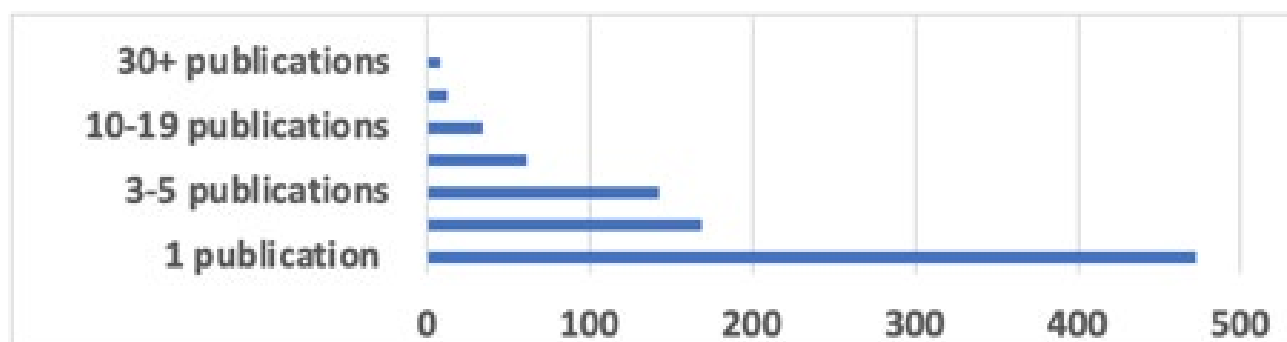
This concentration of funding in certain countries is further reinforced by an analysis of the publications resulting from GCRF awards. There, we find a small number of countries and institutions with a high ‘density’ of partnerships (mainly in middle income countries), alongside a ‘long tail’ with a great spread of partnerships across lower income countries and institutions. In particular we see a high number of publications from a small set of institutions based in Kenya and South Africa (Figure 7). Overall, over 900 Southern academic institutions have been involved in co-authoring GCRF publications. Of those, over half have only one co-authored publication (Figure 8). These patterns point to how GCRF funding has become concentrated in a small grouping of better resourced countries and academic institutions.

**Figure 7: Top five Southern institutions by number of GCRF publications, September 2020.**

Country	Institution	Number of co-authored publications
Kenya	Kenya Medical Research Institute	144
South Africa	University of Cape Town	108
South Africa	University of the Witwatersrand	93
South Africa	Stellenbosch University	68
Kenya	International Livestock Research Institute	62

Source: Dimensions

**Figure 8: Variance in number of GCRF publications per Southern institution. September 2020.**



Source: Dimensions.

## **Awards do not cluster strongly around the challenge areas**

Topic modelling allows us to cluster awards by their area of focus and identify themes emerging across the portfolio, to complement the limited data captured within the fund about GCRF awards. The topic model analysis across the GCRF portfolio<sup>53</sup> identifies a set of 28 main thematic clusters. Each cluster is identified based on keywords drawn from the cluster analysis, which provides an indication of topics and content of the awards within the cluster. Clusters are not of equal size and have different levels of subclusters. These clusters illustrate the emerging themes and topics within GCRF based on data-driven analysis of the content of the awards. As such, the topic clusters represent a more detailed picture of what R&I is being carried out in the awards than would be found if only looking at top-down subject categories or GCRF challenge areas.

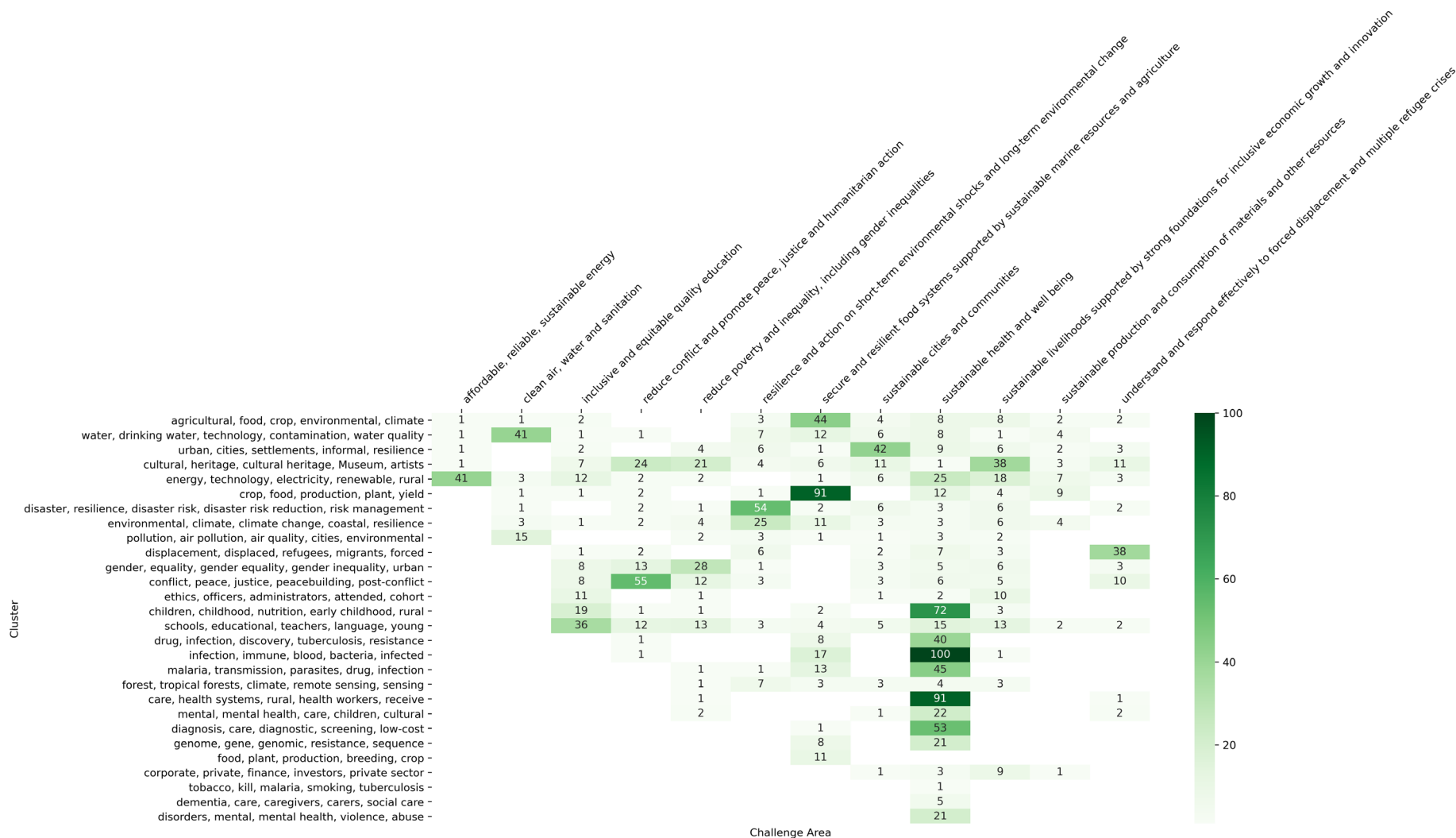
We can map these topics against the challenge area associated with each award (Figure 9<sup>54</sup>). Doing this, we find that there is some alignment of topics to challenge areas – for example we see that the cluster on ‘energy, technology, electricity, renewable, rural’ is closely aligned to the ‘affordable, reliable, sustainable energy’ challenge area. However, in general, challenge areas do not appear to be a strong organisational framework to structure the research topics identified.

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<sup>53</sup> The topic model analysis draws on the GCRF data set curated from GCRF award and project information from Gateway to Research and ResearchFish, combined with data from DPs’ award administration systems, and the GCRF award information identified in Dimensions analysis.

<sup>54</sup> Strong alignment of topic clusters with challenge areas is shown in dark green

Figure 9: Mapping of GCRF topic clusters to challenge areas.



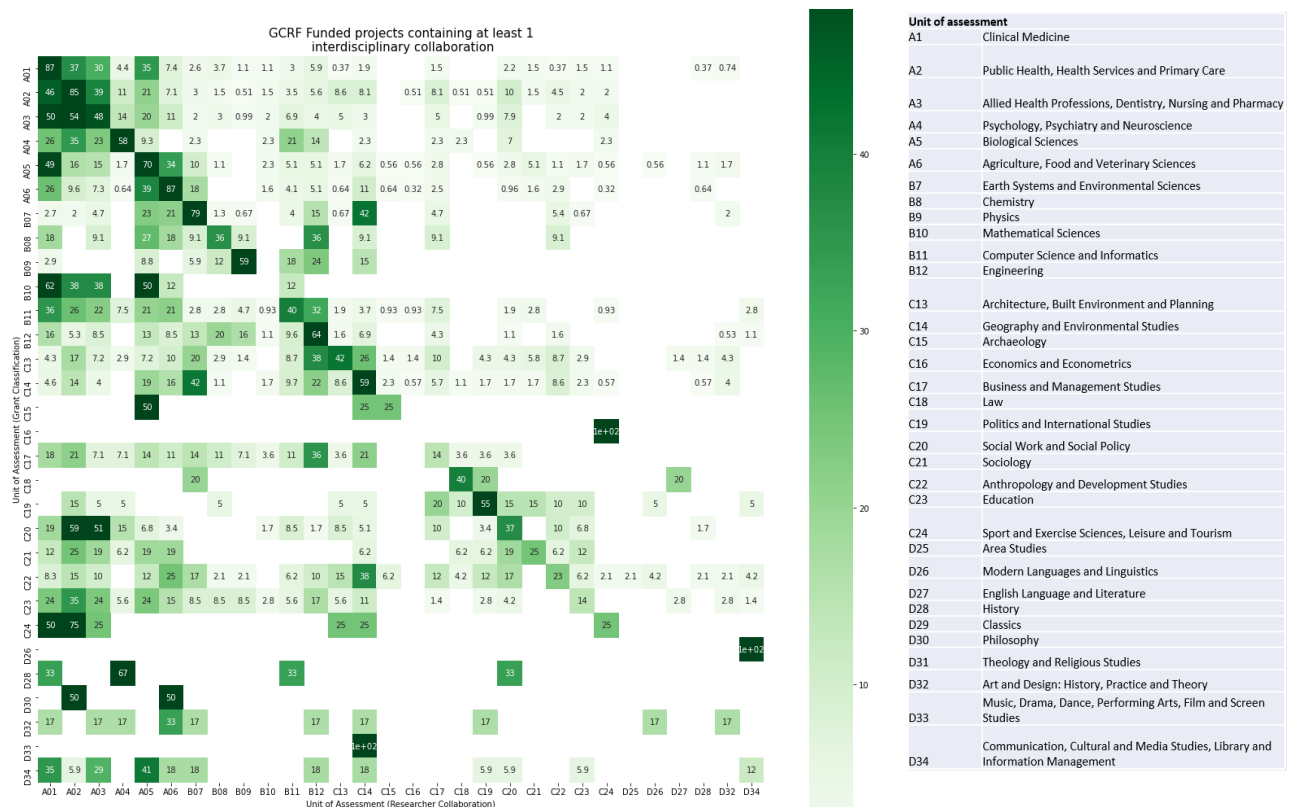
Source: Digital Science analysis and BEIS tracker, December 2020. The numbers denote the numbers of grants assigned to topics.

## GCRF funding is more interdisciplinary than UKRI funding on average

We were also able to analyse interdisciplinarity for a part of the GCRF portfolio (Figure 10). This analysis was limited to UKRI grants listed in Gateway to Research. For these awards we assigned each to a specific discipline, then assessed how many of the awards also included at least one researcher from a different discipline. A researcher's discipline is calculated by looking at the unit of assessment (UOA) that is most commonly used to describe their work. We note this gives a loose definition of interdisciplinarity, since the analysis does not assess the extent of involvement of those individuals or how meaningful the interaction was across those disciplinary boundaries.

**Figure 10: Interdisciplinarity heatmap of GCRF portfolio, December 2020.**

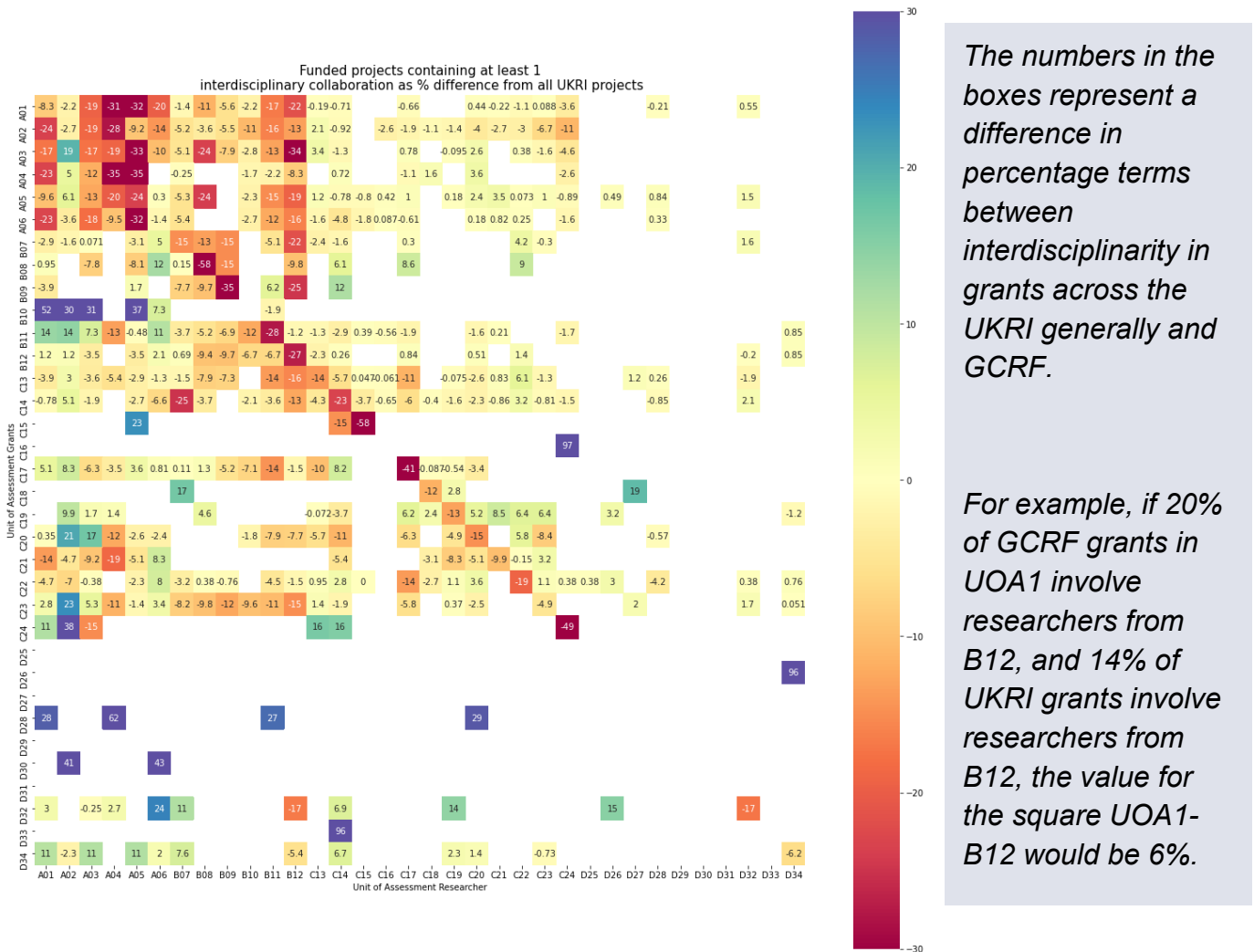
The numbers denote the number of grants in a UoA classification that have at least one collaboration between researchers that work in a discipline defined by another UoA. Grant Classifications are shown on the y axis, and Researcher Classifications on the x axis.



GCRF aims to fund interdisciplinary research and innovation because complex development challenges require interdisciplinary and multi-sectoral approaches. We would therefore expect to see more interdisciplinary collaboration than on average across the entire UKRI portfolio; and, indeed, this is the case. By comparing the GCRF interdisciplinary matrix to the UKRI interdisciplinary matrix, we can get a relative sense of how interdisciplinary-focused the GCRF program has been relative to the wider UKRI portfolio. A heatmap shows areas where there is more or less cross-collaboration in the GCRF portfolio relative to the wider UKRI portfolio (Figure 11). In particular we note that GCRF indicates more involvement of researchers from

the biomedical and health sciences in awards that are located primarily in either the physical or social sciences. We also note a significantly higher level of interdisciplinarity in awards located primarily in the arts and humanities, with researchers from several fields contributing. Generally, there are fewer awards that are clustered on the diagonal, indicating that the fields of the research and researcher are the same, suggesting the GCRF portfolio is, on average, more interdisciplinary than the wider UKRI portfolio.

**Figure 11: Comparison of interdisciplinarity of GCRF portfolio against a baseline of the wider UKRI portfolio.**



Source: Gateway to Research.

Overall, GCRF is a complex and diverse fund which resists simple characterisation. Despite this, we can discern some overall trends. The portfolio produces a diverse range of outputs beyond publications and is multidisciplinary in nature. The benefiting countries are primarily middle-income. We see that around half the funding is awarded via 'core' funding to DPs which tends to encourage single discipline working rather than through more explicitly cross-cutting funding streams that encourage collaboration between DPs and enhance interdisciplinarity. The challenge areas do not provide a strong organising structure for the portfolio overall. We explore the implications of these observations further in the following chapters.

## 4. Findings

### 4.1 MEQ 1: Is GCRF relevant, coherent, well-targeted, fair, gender-sensitive, socially inclusive and well-managed?

This section discusses the main findings from the three assessments carried out from August 2020 and February 2021. The findings highlight what is working well and what requires improvement. Assessments are made of the extent to which GCRF is relevant, coherent, well-targeted, fair, gender-sensitive and socially inclusive.

#### Box 1. Summary of findings

**In Stage 1a of the evaluation, the three assessments found that GCRF is making clear progress in terms of becoming relevant, coherent, well-targeted, fair, gender-sensitive and socially inclusive, but progress is uneven, and important gaps remain.** The greatest progress is seen in relation to relevance and equitable partnerships<sup>55</sup>, and the weakest in relation to the integration of poverty concerns at all levels of the fund.

The relevance assessment finds that:

- Overall, GCRF is largely succeeding in funding relevant research that responds to development needs and priorities, although some important gaps remain.
- Challenge Leaders and challenge portfolios have helped to enhance relevance, although this is limited to UKRI, and there are questions about whether GCRF is over-reliant on a small number of individuals and their networks in the UK and selected countries, which is insufficient to ensure relevance across all programmes and DPs. Ongoing relevance of awards through implementation is not monitored.
- Thinking on coherence was typically less well-developed than thinking on relevance, with coordination between awards particularly underdeveloped. There are several pockets of good practice that can be built on, especially in the large-scale signature investments.

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<sup>55</sup> Relevance is the extent to which the intervention objectives and design respond to beneficiaries', global, country, and partner/institution needs, policies, and priorities and continue to do so if circumstances change and the importance and value to key intended users of the new knowledge and understanding generated. Equitable partnerships is an important aspect of 'research fairness', defined as a way of designing, conducting and evaluating research that takes into consideration the potential effects (positive and/or negative) of the research on all those involved (as partners, participants, users, and beneficiaries), as well as the broader impact on the context where the research takes place.

The fairness assessment finds that:

- Overall, there is strong support for the importance of equitable partnerships in GCRF, with good practice promoted through call requirements and comprehensive guidance, although implementation of the guidance is not yet tracked.
- Implementation is uneven in practice across DPs and awards, due to compressed timelines for developing proposals and establishing partnerships, which favour pre-existing partnerships. Broader fairness issues beyond partnerships are not considered, especially negative impacts for less well-known institutions in lower-income countries.
- GCRF is engaging with a broad cross-section of the UK R&I community, many of whom have had limited exposure to international development. This creates a potential risk of doing harm to local R&I stakeholders and communities through introducing inexperienced researchers to development contexts and potentially vulnerable communities. GCRF needs to do more to mitigate these risks from a strategic level.

The GESIP assessment finds that:

- GCRF is making positive, though uneven, progress in integrating GESIP concerns across the fund. There are pockets of promising practice across all GESIP areas, including gender and social inclusion/equality, diversity and inclusion (SI/EDI) policies and statements, and requirements cascaded down to award holders through call documents and scrutiny at the selection stage.
- Faster progress is constrained by a lack of strategic coordination both among DPs and between DPs and BEIS, leading to fragmented guidance, a wide variety of practices and over-reliance on award holders' individual interpretations. Across the fund there is an underinvestment in specialist GESIP expertise amongst DPs and at BEIS to provide leadership and support for gender and inclusion strategies, and a lack of monitoring processes constrains learning from practical implementation of measures to address GESIP concerns in awards.
- Poverty and poverty alleviation are very minimally framed in GCRF – under the umbrella of the SDGs, poverty is implicitly and simplistically assumed to be core to all R&I activities undertaken through the GCRF, and there is a wide diversity in the framing and understanding of poverty-related terminology across the system. This means that poverty dimensions of GCRF-supported research are not tracked and there is under-reporting of poverty results and outcomes.

#### 4.1.1 Focus and framing of the three modules

The **Relevance and Coherence** module focuses on the relevance and coherence of GCRF to both 'global' policies and programmes and also to regional, national and sub-national needs



and priorities in selected geographical areas. These questions are important as the goal of GCRF is to 'support cutting-edge research that addresses the challenges faced by developing countries'.<sup>56</sup> It is important to understand whether GCRF is funding the 'right things' in order to position research for impact in the contexts in which it works. Experience in the research for development (R4D) field highlights the importance of 'early and ongoing consideration of the wider context for research application' as depicted in the GCRF ToC.<sup>57</sup> Additionally, the Organisation for Economic Cooperation and Development's Development Assistance Committee (OECD DAC) criteria point to the challenge that 'a lack of coherence can lead to duplication of efforts and undermine overall progress to global development goals'.<sup>58</sup> Both relevance and coherence are important considerations for research in a development context, to frame and address development priorities, leverage synergies and enhance research impact.

For the purposes of this evaluation, **relevance** is framed in relation to OECD DAC criteria, where it is defined as 'The extent to which the intervention objectives and design respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities and continue to do so if circumstances change'. It is also framed in relation to the Canadian International Research Centre's research quality instrument, RQ+, around research importance: '[T]he importance and value to key intended users of the new knowledge and understanding generated by the research', and how far 'research processes and products' are relevant to the needs and priorities of potential users.<sup>59</sup>

For the purposes of this evaluation, **coherence** is defined in accordance with OECD DAC criteria as 'The compatibility of the intervention with other interventions in a country, sector or institution'.

The **Research Fairness** module aimed to assess the extent to which GCRF is treating partners, stakeholders and communities in the Global South fairly, and contributing to the emergence of equitable and sustainable collaborations. This relates to relations between partners (equity), as well as looking at 'fairness' as a broader concept encompassing other dimensions, such as who has the opportunity to become a research partner in the first place and how this particular research partnership, together with others, impacts on the context where it takes place. These questions are important as GCRF investment has brought many new UK researchers and institutions into contact with development issues and with institutions and researchers in the Global South. In the GCRF strategy, this expansion of the UK R&I

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<sup>56</sup> <https://www.ukri.org/research/global-challenges-research-fund/>

<sup>57</sup> Foundation Stage Report, p.B2.

<sup>58</sup> OECD DAC revised criteria the DAC criteria set out the globally agreed standards for evaluations of development of development interventions.

<sup>59</sup> Ofir, Z., Schwandt, T., Duggan, C. and McLean, R., 2016. Research Quality Plus [RQ+]: A Holistic Approach to Evaluating Research. IDRC. Available at: <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/56528/IDL-56528.pdf?sequence=2&isAllowed=y>

capacity for challenge-led research is seen as a key tenet of the fund, which provides ‘a unique opportunity to build a global community of researchers committed to sustainable development and the eradication of poverty’.<sup>60</sup> This opens opportunities, but also has the potential risks of ‘doing harm’ in project settings due to inexperience in development contexts and negatively impacting on the research ecosystems in the Global South.

For the purposes of this evaluation, **research fairness** is defined as a way of designing, conducting and evaluating research that takes into consideration the potential effects (positive and/or negative) of the research process and results on all those involved (as partners, participants, users, and beneficiaries), as well as the broader impact on the context where the research takes place.

The combined **GESIP** module is a ‘social audit’, which assesses the extent to which poverty, inequality and other forms of social exclusion (including disability) are addressed in the planned outcomes and the pathways to impact of (GCRF) programmes and investments. The legal and policy context for GESIP is framed in three UK acts: the **International Development Act (2002)** that requires ODA funding to contribute to poverty reduction;<sup>61</sup> since 2014, UK law requires ODA spending ‘to contribute to reducing inequality between persons of different gender’;<sup>62</sup> and the **2010 Equality Act** requires that public organisations<sup>63</sup> promote equal opportunities for everyone and protect the rights of those with protected characteristics (including, but not limited to, gender, sexual orientation, age, race and disability) through implementing policies and strategies which prevent disadvantage and discrimination. These legal accountabilities set the parameters of the GCRF as a government ODA fund, which expects that funded research will show development impacts that are poverty-focused, gender-sensitive and socially inclusive. As such, it is incumbent on the R&I sector to show ODA compliance through tackling instances of under-representation, differential needs and systemic disadvantage to improve the relevance of R&I findings, to support inclusion, to reduce the impact of bias and, ultimately, to contribute to reducing poverty and inequalities between genders.<sup>64</sup>

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<sup>60</sup> BEIS, 2017. UK Strategy for the Global Challenges Research Fund.

<sup>61</sup> UK Parliament, 2002. International Development Act 2002: ‘The [Minister] may provide any person or body with development assistance if [the Minister] is satisfied that the provision of the assistance is likely to contribute to a reduction in poverty’. Available at: [www.legislation.gov.uk/ukpga/2002/1/contents](http://www.legislation.gov.uk/ukpga/2002/1/contents)

<sup>62</sup> UK Parliament, 2014. International Development (Gender Equality) Act 2014. Available at: [www.legislation.gov.uk/ukpga/2014/9/section/1/enacted](http://www.legislation.gov.uk/ukpga/2014/9/section/1/enacted)

<sup>63</sup> UK Parliament, 2010. Equality Act 2010. Available at: <https://www.legislation.gov.uk/ukpga/2010/15/contents>  
There are nine protected characteristics – age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage and civil partnership, and pregnancy and maternity – all of which were covered by previously existing legislation which the 2010 Act replaced.

<sup>64</sup> Cavaghan, R., 2020. Gender, Science, Technology and Development: Literature Review for the Edinburgh University's Working Group on Gender in International Development Research. University of Edinburgh, January 2020 [unpublished].

For the purposes of this evaluation, **gender** is a social scientific term used to describe shared social ideals of femininity and masculinity, associated behavioural expectations and relations between sexes.<sup>65</sup>

For the purposes of this evaluation, **social inclusion (SI)** is defined as the process of improving the terms of participation in society, particularly for people who are disadvantaged, through enhancing opportunities, access to resources, voice and respect for rights.<sup>66</sup>

For the purposes of this evaluation, **equality, diversity and inclusion (EDI)** is a conflagration of terms closely linked with that of SI, and is common parlance in the GCRF ecosystem.<sup>67</sup> The use of the EDI acronym often implicates gender concerns with respect to 'equality' – and can be used as a catch-all for gender equality and social inclusion concerns. However, for the purposes of this report, SI/EDI is combined, and excludes a focus on gender equality.

For the purposes of this evaluation, **poverty** entails more than the lack of income and productive resources to ensure sustainable livelihoods. Its manifestations include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion, as well as the lack of participation in decision making.<sup>68</sup>

#### 4.1.2 Relevance and coherence assessment

**The relevance and coherence assessment found that, overall, GCRF is largely succeeding in funding relevant research that responds to development needs and priorities, although some important gaps remain.<sup>69</sup> Coherence was typically less well-developed than relevance, with some progress towards enhancing internal coherence, but much less on external coherence, but there are several pockets of good practice that can be built on.**

At award level, most of the awards assessed in our sample clearly demonstrated relevance, including through generating innovation, responding to recognised priorities or urgent needs, providing interdisciplinary insights, and building local capacity. Award holders generally had

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<sup>65</sup> Ibid., 10.13140/RG.2.2.18199.73125. Further elaborated in Tetra Tech, 2020. Review of Approaches to Gender Equality: the Newman Fund and The Global Challenges Research Fund, p.7.

<sup>66</sup> UN Department of Economic and Social Affairs, 2016. Report on the world social situation 2016. Leaving No One Behind: the Imperative of Inclusive Development. Available at: <https://www.un.org/esa/socdev/rwss/2016/chapter1.pdf>

<sup>67</sup> Guyan & Oloyede, 2019; Moody & Aldercotte, 2019.

<sup>68</sup> <https://www.un.org/en/sections/issues-depth/poverty/>

<sup>69</sup> 'Relevance – the extent to which awards are consistent with and responsive to target groups' needs, SDG priorities and partners' and funders'/donors' policies – global, regional, national and sub-national levels'. Relevance Module Technical Report, 2021.

considered relevance in detail, driven by application requirements, and most awards aligned with country or regional priorities independently identified through our contextual analysis. Relevance in the awards depends, to a large extent, on how well networked and plugged into the communities of focus the investigators are, as award holders often rely on the existing personal and professional experience, knowledge and pre-existing partnerships in focal countries, rather than formal needs assessments or scoping activities. Outside the signature large-scale investments, broader stakeholder consultation to inform the design of research is less widespread. Where this is done it is typically informal, and there is limited evidence of meaningful community-level engagement to identify needs and priorities at the design stage. This suggests that the ToC assumption that researchers, innovators and LMIC partners have the expertise to map the landscape and co-identify priorities and research issues is not fully being realised – or at least that where that expertise exists it is not being fully leveraged.

**GCRF has made efforts to improve its portfolio-level strategic focus – and therefore fund-level relevance – since the Independent Commission for Aid (ICA) review in 2017, but there are still important gaps, especially in how SDGs and challenge areas are applied in practice.** The establishment of challenge portfolios and Challenge Leaders has been a step towards ensuring greater relevance across UKRI and Research Council awards, helping to bring projects together under a common framing and introduce more strategic focus on high-level priorities. However, the remit of the Challenge Leaders is largely (although not exclusively) limited to UKRI and Research Council portfolios and there are questions about whether GCRF is over-reliant on this small number of individuals compared to the scale of the fund (there are only ten Challenge Leaders and over 2000 awards) and their networks, which is insufficient to ensure relevance across all programmes and DPs. Detailed decision making on strategy and portfolios is still very much devolved to DPs.

While SDGs are widely used and understood across the portfolio, they are very high-level, and awards are often linked to multiple SDGs (reflecting the interdisciplinary nature of the fund and the interconnectivity of the SDGs). Challenge Areas do not seem to be as widely understood, with topic modelling suggesting that the classification may have been fairly arbitrary in some cases. This makes it difficult to make meaningful judgements on the overall thematic shape of the GCRF portfolio and thus the relevance to addressing specific SDGs or Challenge Areas.

**Proposal processes and funding criteria are crucial mechanisms for ensuring relevance at the application stage, but relevance is generally not considered in ongoing monitoring and reporting requirements.** Relevance is an important consideration in application processes, with call documents ensuring a focus on ODA compliance and relevance of SDGs, and panel processes and interviews used to consider how research will respond to local contexts. While it can be challenging to ensure panels include expertise from relevant countries and regions, given the broad geographical scope of GCRF, there have been improvements in expanding the diversity of panels in recent years. However, while proposal processes are strong, information on relevance is generally not captured in monitoring and reporting requirements outside of the major programmes.

Thinking on coherence was less well-developed than thinking on relevance, but there are several pockets of good practice that can be built on. At portfolio level we found that UKRI and the Challenge Leaders are important drivers of coherence within GCRF<sup>70</sup>. UKRI spearheads several coordination mechanisms that aim to promote collaboration across awards and has conducted landscaping analysis to map priorities within the challenge portfolios. The Challenge Leaders have made explicit efforts to improve coherence through drawing on existing networks and knowledge of other initiatives, building dialogue between Research Councils, and helping to identify thematic overlaps, intersections and gaps within and beyond GCRF<sup>71</sup>. These are examples where the ToC assumption around priority identification is being met. However, these initiatives have had limited influence on improving coherence in the Academies, UKSA and Funding Councils beyond the cluster of Research Councils and central UKRI. The evaluation did not see evidence to inform a view of how far cross-HMG governance structures to improve coherence in R&D within the UK have tangibly impacted decision making within GCRF.

**Recent large-scale programmes have taken a more systematic approach to ensuring relevance and coherence**, with greater funding, they are required to undertake up-front scoping to identify gaps and opportunities, while DP level rigorous multi-stage proposal processes provide opportunities for applicants to build strong coalitions and co-design research with relevant partners, and incorporate requirements for context and political economy analysis into project processes. These approaches represent a step forward for GCRF in terms of ensuring relevance within flagship programmes, but represent pockets of good practice rather than systematic improvement across the fund.

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<sup>70</sup> Other mechanisms to support coherence exist across different DP groups e.g. the cross-Academy implementation group

<sup>71</sup> The extent to which these efforts have been successful is not yet known. Challenge Leaders will be examined as part of the next stage of the evaluation (stage 1b), to understand how they work and early indications of results in more detail.

**The relevance review also found that while opportunities have been created for GCRF research to respond to Covid-19 – including new funding streams such as the Agile Response Call – adaptations to existing projects in our sample were relatively minor.** In many cases the pandemic has restricted stakeholder engagement, with potential implications for relevance and coherence, although virtual activities have in some cases promoted greater inclusivity of stakeholders.

#### 4.1.3 Fairness assessment

**The assessment found positive progress in relation to equitable partnerships, firmly established in GCRF as an ambition, with good practice promoted through call requirements and comprehensive guidance. However, implementation is uneven in practice across DPs and awards, and broader fairness issues beyond partnerships are not considered, especially partnerships with less established institutions in lower-income countries.**<sup>72</sup> There has been a strong strategic focus on equitable partnerships as a cornerstone of the fund, both as a means to deliver excellent, relevant and impactful research and as a way of building long-term capacity of researchers and institutions. GCRF as a whole has undergone a significant learning curve since the start of the fund, and UKRI has taken a lead role in the effort to increase the fairness, equity and representativeness of GCRF partnerships, delivering a number of initiatives that were consistently mentioned by DPs as milestones in this process.

The focus on equitable partnerships in GCRF calls and selections is now captured in clearer language in funding call documentation, more explicit requirements, and clearer guidance given to peer reviewers and assessment panels. Involvement of Southern stakeholders in the selection process has increased significantly since the start of GCRF, with most DPs now incorporating a role for Southern experts in the review and selection of awards. For example, UKRI's international Peer Review College is an exemplar in this regard, and other DPs also engage peer reviewers and assessors from the Global South (see Box 5). However, there is less involvement of Southern stakeholders in GCRF's wider agenda-setting and decisions around programmes, or in ongoing oversight of awards.

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<sup>72</sup> Fairness Assessment Technical Report, 2021.



**The establishment of strategic partnerships between GCRF DPs and institutions in the Global South represents GCRF's positive commitment to strengthening equitable partnerships and Southern involvement.** The two partnerships reviewed – between a) UKRI and the African Research Universities Alliance (ARUA) and b) the Royal Society and the African Academy of Sciences (AAS) for the Future Leaders – Africa Independent Research (FLAIR) – show positive progress (see Box 2).

### **Box 2. UKRI–ARUA Programme Partnership**

The UKRI–ARUA Programme Partnership was launched in 2019 as an initiative of the General Secretary of ARUA, Ernest Aryeetey, and the UKRI's International Champion, Andrew Thompson. It has three main objectives:

- To build significant capacity for science and research across African Universities.
- To provide opportunities for African research teams and GCRF grant holders to co-create new projects that build on current investments by the GCRF and ARUA.
- To build equitable collaborations to strengthen capacity for research, innovation and knowledge exchange in both the UK and developing countries.

ARUA is a network of 16 research universities in nine African countries, with the aim of improving the quality of research conducted in Africa by African researchers. Modelled on networks such as the UK Russell Group, ARUA was inaugurated in Dakar in 2015.

The partnership is underpinned by a Joint ARUA–UKRI Research Board, co-chaired by the Secretary-General of ARUA and the UKRI GCRF Champion. The Board meets at least once a year, approves programmes of work and funding, receives annual progress reports, and is supported by ARUA and UKRI. To support the delivery, the programme funds a project coordinator who is based in ARUA in Ghana and acts as a link between UKRI, the PIs on the grants, and ARUA.

In support of the objectives, UKRI provides funding for two types of awards:

- Capacity Building award. All 13 Centres of Excellence were given the same Capacity Building award of £600,000. Of this, 70% is allocated to capacity building (for activities such as organising workshops and mentoring); 20% is for scoping studies (to identify challenges in Africa that are specifically related to the SDGs, and how research can be used to address this challenge); and 10% is for administrative purposes.
- Research Excellence award. Centres must apply directly to UKRI for the Research Excellence award, up to a maximum value of £2 million.

There are indications from interviews that this type of equitable engagement with well-established, well-respected pan-African institutions could potentially play a bridging role to bring a broader variety of institutions (in terms of size, type and geography) into the GCRF sphere, i.e. with more established universities building the capacity of less well-resourced universities in low-income countries (LICs) through a ‘hub and spoke’ model.

**However, the approach to fairness issues across DPs remains uneven, and there are some important gaps and risks, particularly when it comes to engagement with non-academic stakeholders and communities.**<sup>73</sup> There is great diversity in award-level partnerships in terms of Southern researchers involved, their roles, and the attention given to equity and fairness in partnerships. The majority of GCRF awards reviewed seem to be based on well-functioning and mutually beneficial collaborations, with the Interdisciplinary Hubs standing out as examples of good practice in this regard. However, evidence was too limited to make robust conclusions, and further evaluation of how awards have been implemented in practice is required in future stages of the evaluation.

The data science analysis shows a distribution of partnerships shows both ‘depth’ (a small number of countries and institutions with a high number of GCRF award partnerships) and ‘spread’ (a large number of countries and institutions with low-level GCRF engagement). A limited number of countries and institutions account for a significant share of the total number of UKRI GCRF award partnerships – five institutions in just two countries hold the . This partly reflects the tendency, highlighted in interviews, of UK researchers to go for ‘tried and tested’ partners. Contributing factors are the need for Southern partners to meet due diligence standards (which is difficult to do for smaller institutions), as well as compressed time frames for most funding. Short timeframes limit the possibility for UK researchers and innovators to identify and establish new partnerships and limit the roles that Southern partners play in research design. Common barriers to fair process are administrative and financial requirements, including the need to accept payment in arrears in most cases, which constitutes a real burden for Southern partners. This suggests that the ToC assumption that there is sufficient appetite and capacity in LMICs to participate in GCRF may not hold true, with administrative requirements and capacity limiting the ability of some institutions in the Global South to participate.

GCRF awards in the sample also report extensive engagement with stakeholders other than formal partners, including local and national governments, national and international non-governmental organisations (NGOs), and local communities – and, less frequently, the private sector. However, our analysis of the awards in the sample shows inconsistencies that suggest that little thinking has been done within GCRF on what ‘fairness’ means when engaging with non-academic partners and local communities, which raises a perceived risk of research projects ‘doing harm’ by, for example, displacing local priorities or placing undue burden in terms of time commitments on national or local stakeholders.<sup>74</sup> There are important related risks of creating unrealistic expectations for immediate benefits in local communities or over-

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<sup>73</sup> Fairness Assessment Technical Report, 2021.

<sup>74</sup> Fairness Assessment Technical Report, 2021.



researching some communities, where uncoordinated awards are working in the same geographical areas (e.g. the relevance assessment found a cluster of awards working on food security in Ethiopia, with no coordination between them). This suggests that more work is needed to ensure the expertise is in place to mobilise coalitions for uptake as assumed in the ToC.

While awareness of these risks exists amongst some individual research teams, not all teams have the experience to manage these, as GCRF involves a high number of UK academics who have not worked in international development before and are therefore new to the challenges of North–South partnerships and engagement with stakeholders and communities. At this stage, we do not yet have evidence of how these risks may be playing out in practice, but the fairness assessment found that these risks are not being systematically escalated or managed at strategic level. While promoting equitable partnerships is essential and should remain a priority, the fairness assessment highlights that other dimensions of fairness should not be overlooked. Perceived risks of negative impacts on development contexts persist even if most of GCRF’s funded partnerships meet high standards of equity and fairness. We discuss this point further in our conclusions.

#### 4.1.4 Gender equality, social inclusion and poverty assessment

**GCRF is making positive, though uneven, progress in integrating GESIP across the fund, with a range of policies and statements being established, and ; however, there is still more work to do to ensure consistent good practice at all levels of the fund.**<sup>75</sup> There are pockets of promising and good practice across all GESIP areas, with shifts more evident with respect to gender equality concerns, and to a lesser extent across SI/EDI concerns. The framing and addressing of ‘poverty’ are shown to be the least fulfilled, and need strengthening.

The legal and policy context for GESIP is framed by three UK acts, First, the International Development Act (2002) with an explicit requirement that the provision of ODA can show it is likely to contribute to poverty reduction. Second, since 2014, UK law requires ODA spending ‘to contribute to reducing inequality between persons of different gender’. Initially the legal requirement applied to the now defunct Department for International Development, by 2017 it extended to BEIS and the GCRF. Beyond legal compliance to ODA spending commitment, the R&I sector, including BEIS and its DPs, are subject to the wider UK equalities framework driven by law and policy which also impacts on research development and delivery. Third, the 2010 Equality Act requires public organisations promote equal opportunities for everyone and protect the rights of those with protected characteristics (including but not limited to gender, sexual orientation, age, race and disability) through implementing policies and strategies which prevent disadvantage and discrimination.

These legal accountabilities set the parameters of GCRF as a government ODA fund, which expects that funded research and innovation shows development impacts that are poverty focused, gender sensitive and socially inclusive. As such it is incumbent on the R&I sector to

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<sup>75</sup> GESIP Audit Technical Report, 2021.

show ODA compliance through tackling instances of under-representation, differential needs and systemic disadvantage to improve the relevance of R&I findings, to support inclusion, to reduce the impact of bias and ultimately, to contribute to reducing poverty and thereby inequalities between genders. In practice, there are some strong foundations, but there is also fragmentation and inconsistency in how these issues are addressed by different DPs across the fund.

Building on previous gender and inclusion assessments, the GESIP assessment shows that some of the recommendations of the Tetra Tech ‘Review of Approaches to Gender Equality’ report (2020) and the EDI reviews (2019) have been gaining momentum.<sup>76</sup> There is a positive, though gradual, progress towards establishing policies, expertise, and MEL systems for integrating and tracking GESIP concerns, although important gaps remain around building up dedicated senior management capacity and clear accountabilities through the GCRF levels for implementation of GESIP consistently throughout the fund. Overall, this suggests that gender and social inclusion can be designed into R&I for inclusive impacts, as set out in the ToC assumptions, but that this is not yet being fully realised across the fund.

**The mainstreaming of gender equality concerns across GCRF is moving at a gradual pace and is being supported by a variety of mechanisms from DP level through to award holders – although strategic steers at both levels are mostly uncoordinated.** Several promising processes were observed around gender mainstreaming in the strategies and systems of DPs and award holders. BEIS is currently developing a comprehensive gender strategy to bring alignment to gender mainstreaming efforts across the fund. At DP level, UKRI introduced Gender Equality Statements and the Gender Equality Act Compliance Procedure from 2019. At award level, the development of a gender equality toolkit by Edinburgh University is a promising initiative that could be shared more widely to promote consistency around common gender mainstreaming practices. There are signs that this process is already under way in the form of informal cascading and collecting learning processes at the DP and award levels – but these approaches are largely dependent on infrequently available spaces for sharing, as well as the inclinations of energised groups of individuals.

The mainstreaming of gender-responsive expertise across the GCRF system is also becoming a more established practice, e.g. some research Hubs have provided access ‘Gender Champions’ as well as mandated gender experts in Executive Advisory Boards. At award level, gender experts are increasingly providing inputs at the proposal and panel review stages, and

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<sup>76</sup> **Recommendation 1:** BEIS should develop a clear, coherent approach to gender equality, diversity and inclusion at the ODA portfolio level.

**Recommendation 2:** BEIS should institute a systematic approach to learning, clearly differentiating between internal and external functions at key stages in the fund management cycle.

**Recommendation 3:** BEIS should develop a fund level approach to gender equality, diversity and inclusion that is tailored to each of the funds.

**Recommendation 4:** BEIS should ensure there is dedicated senior management capacity, sufficient resourcing and clear accountabilities at all levels to design, implement, monitor and adapt the approach.

teams show good motivation for understanding and appreciating the importance of gender diversity in teaming arrangements.

There is promising gender equality MEL guidance in place in some DPs (e.g. UKSA, UKRI), while the ongoing use of the BEIS gender equality marker is another promising practice – although some issues remain with respect to data capture, as there is no way of differentiating between projects reporting on gender-responsive teaming arrangements, and gender-focused research content/methods.

**However, there are ongoing gaps in relation to all these developments, with a notable degree of fragmentation and lack of coordination, leading to significant variability in the way gender mainstreaming strategies are implemented.** At award level, most award holders use their own initiative and framing in developing relevant strategies and systems, so approaches depend on the interests and experience of award teams, rather than being shaped by guidance from DPs. Beyond the proposal and panel review stages, the lack of formal monitoring, reporting and accountability mechanisms in relation to gender equality commitments means that there is no tracking of how gender concerns have actually been implemented in awards. As a result, progress is gradual, and GCRF could be moving in a faster and more coordinated way while also celebrating ‘excellence’ as much as ‘compliance’ around gender equality with award holders.

**The mainstreaming of SI/EDI compliance shows positive progress around policies and structures, and also shows promising signs of downward diffusion of EDI language and concepts in a good number of DPs and awards, although this is limited by a lack of coherence across DPs.**<sup>77</sup> The Delivery and Strategic Plans of UKRI offer a good foundation through which to continue to embed strategic approaches to for SI/EDI mainstreaming, while a number of activities among other DPs – Royal Academy of Engineering (RAEng), British Academy (BA), Medical Research Council (MRC) and Innovate UK in particular – give good examples of organisational theories of change or other internal policies and statements to address top-level framing of how to promote SI/EDI. Other promising measures include UKRI’s EDI External Advisory Committee, Innovate UK’s Energy and Equality, Diversity and Inclusion team, and MRC’s network of employees designated as ‘equality champions’. Some SI/EDI-sensitive MEL systems are appearing at DP level, e.g. the UKRI’s annual diversity review is promising in that this provides a common mechanism to map and disseminate SI/EDI data in GCRF (ESRC, AHRC, MRC, NERC, BBSRC and STFC are known participants). Other positive

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<sup>77</sup> The UK’s R&I sector, including BEIS and its DPs, are subject to the wider UK equalities framework driven by law and policy which also impacts on research development and delivery. The 2010 Equality Act requires public organisations promote equal opportunities for everyone and protect the rights of those with protected characteristics (including but not limited to gender, sexual orientation, age, race and disability) through implementing policies and strategies which prevent disadvantage and discrimination. UKRI DPs delivery, action and strategic plans for addressing SI/EDI considerations have emerged after UKRI developed a strategy and action plan for equality, diversity and inclusion in 2018–19. Within UKRI, this was followed by a formal requirement for all calls to incorporate an equality impact statement. Other Dps have followed their own pathways to addressing SI/EDI concerns.

findings are noted with respect to the AHRC, MRC and Innovate UK – each of which engage with their own independent annual EDI monitoring mechanisms.

**However, these efforts lack guidance from a strategic level in the fund, and are not yet coherent across DPs, nor is progress tracked, leading to the development of a divergent range of strategies, policies and systems on SI/EDI.** Guidance is not only fragmented at DP level, but actions to drive more active engagement from awards have been limited, resulting in award holders often applying their own framing and understanding of SI/EDI compliance criteria – almost always in the proposal and/or panel review processes. This has meant that, beyond the selection process, the implementation of SI/EDI at award level has largely been driven by the team, dependent on the focus of the award. There is no tracking mechanism for capturing SI/EDI monitoring data into indices or a single index. In particular, the lack of a mechanism for capturing the depth and breadth of uptake on LGBTQIA+ concerns in teaming arrangement or research content represents a gap for MEL systems between the DPs and award holders. Finally, it should be noted that the scope and reach of the disability marker in the BEIS tracker has overlooked up to 25% of awards for assessment purposes and, like the gender marker in the BEIS tracker, it does not differentiate between disability-responsive teams or research content.

As a result, and in line with preceding conclusions, there is evidence of uneven managerial guidance and accountability with respect to the mainstreaming of SI/EDI issues across GCRF – particularly in relation to LGBTQIA+ concerns. Consequently, progress on the mainstreaming of SI/EDI compliance concerns is somewhat behind that of gender compliance mainstreaming concerns – particularly at award level. The reliance on awards to implement SI/EDI mechanisms rather than this being led from a strategic level in the fund risks constraining the potential of GCRF awards to tackle fundamental issues of social inclusion and equalities.

**Poverty and poverty alleviation are very minimally framed in GCRF: under the umbrella of the SDGs, poverty is implicitly and simplistically assumed to be core to all R&I activities undertaken through the GCRF, leading to a wide diversity in the framing and understanding of poverty-related terminology across the system; consequently, the detailed insights and measures to address poverty alleviation may not receive due attention in the design of calls and awards.** At DP level there is some evidence to suggest some DPs have taken steps to define expectations on the framing and understanding of poverty in funding calls (e.g. UKRI and ESRC), Delivery Plans (ESRC, RAEng) or as part of communication material (RAEng, UKSA). A number of workshops, briefings, seminars and webinars are being undertaken among DPs and award holders that may offer shared insights on how poverty is being addressed.

However, there is limited detailed guidance at DP and award levels for promoting how poverty is framed and understood in GCRF, partly as a result of the International Development Acts (2002, 2014) not including any requirements in this regard. Framing how poverty is addressed has been left open to individual award teams, many of whom understand their research to be automatically relevant to poverty alleviation given that their activities are being undertaken in ODA-listed countries (specific LMICs). There are also limited expectations regarding the

development and capacity building of poverty-specific expertise across DPs and award holders. As a result, poverty dimensions of GCRF-supported research are not tracked, and there is under-reporting of poverty results and outcomes.

**Explicit guidance from DPs on adapting to a Covid-19 context with respect to the GESIP dimensions was rarely found or reported, although this is not surprising given the dynamics of the pandemic.** Evidence from the award holder review suggests that GESIP-related dialogue was prominent, but largely driven horizontally by the interests of award holders (primarily in relation to methodological adaptations). DPs and awards are demonstrating some adaptive management lessons in responding to Covid-19, although these potentially innovative research methods and approaches have been developed primarily among award holders. Importantly, a Covid-19 'lens' introduces a space where GCRF, DPs and award holders can begin to better understand the interlinkages between gender, poverty and SI/EDI. In effect, this constitutes an opportunity to consolidate cross-cutting lessons across GCRF in the form of series of Covid-19 case studies that can be made accessible and/or tailored to groups of award holders.

### **Spotlight on the signature investments – Collective Programme (UKRI), Interdisciplinary Hubs (UKRI), International Partnerships Programme (UKSA); FLAIR (Royal Society)**

**Based on the evidence from all three assessments, there are four large-scale GCRF programmes in our sample where we have seen practices, structures and systems that have been more effective at combining research excellence with a strategic focus on the fundamentals for development impact – relevance, coherence, fairness and gender equality, social inclusion and poverty concerns.** From our analysis of funding patterns in inception, we estimate that at present these large-scale and cross-cutting investments account for about half of the spend in the portfolio,<sup>78</sup> so these are important examples that provide useful learning for other parts of the portfolio.

- The **Collective Programme** was launched in 2020, with almost £150 million available across a series of calls designed to enhance impact across the six challenge portfolios. The Collective Programme is made up of over 140 projects across 18 funding opportunities.<sup>79</sup>
- The **Interdisciplinary Research Hubs** were launched in 2017 to fund transformative research to address intractable global challenges, with each Hub awarded between £13 and £20 million over a five-year period. 12 Hubs were funded.
- The **UKSA International Partnerships Programme (IPP)** is a five-year, £152 million programme run by the UK Space Agency. Since its launch in 2016, IPP has grant-funded 33 projects in 44 developing countries across Africa, Asia-Pacific and Latin America which aim to use satellite technology and data services to tackle development needs.<sup>80</sup>
- The **FLAIR** fellowship scheme was launched in 2018 as a collaboration of the Royal Society and the AAS. FLAIR targets talented early career researchers, who are nationals of sub-Saharan African countries working in a sub-Saharan African host institution on natural sciences within GCRF challenge areas.<sup>81</sup>

<sup>78</sup> It is not possible to make precise calculations as expenditure on signature investments is coded differently by the DPs in the BEIS Tracker, so we have estimated based on the financial information currently available. Please see the Evaluation Inception Report, 2020 for more detail on funding flows in the GCRF portfolio.

<sup>79</sup> <https://www.ukri.org/our-work/collaborating-internationally/global-challenges-research-fund/>

<sup>80</sup> International Partnerships Programme. Available at: <https://www.gov.uk/government/publications/international-partnership-programme-a-summary-of-the-ipp-midline-evaluation>

<sup>81</sup> Future Leaders – African Independent Research. Available at: <https://royalsociety.org/grants-schemes-awards/grants/flair/>



Although many of these investments will be reviewed in depth in Stage 1b of the evaluation, the module assessments highlighted the following key approaches to learn from:

### **Scoping phases and robust selection processes to build in relevance**

Hubs have more in-depth and extensive proposal processes, which allows time for applicants to build networks and co-design proposals with broader stakeholders. Awards are required to demonstrate that their priorities and areas of focus were co-designed with partners across academia, government, international agencies, NGOs and community groups in developing countries. In the latest round of funding for UKSA IPP, in order to help ensure relevance there is a mandatory 'Discovery Phase' involving context or landscape analysis, requiring political economy analysis and 'user requirements' documentation during the implementation phase. International partners are also required to be involved in and sign off on the development of the project ToC. Larger investments, including Hubs and the Collective Programme, have strengthened assessment processes, via a multi-stage approach that includes panels and interviews in addition to the written application documents. The panels specifically consider how research will respond to local contexts. UKSA IPP requires letters of support, usually from ministerial level, to judge whether the project meets a national priority.

### **A focus on coherence and connecting awards**

UKSA IPP, Hubs and the Collective Programme demonstrate a variety of approaches to improving coherence, including building in formal mechanisms to identify synergies and avoid duplication of effort, reporting requirements on coordination and coherence, and conducting landscaping and mapping activities to cluster investments and identify gaps.<sup>82</sup> Various mechanisms exist within larger programmes to support coherence and networking across cohorts, including programme-level workshops and networking events, Hub Cohort meetings and IPP Open Days.

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<sup>82</sup> Relevance and Coherence Technical Report, 2021, p.26.

### **Focusing on fairness and equity**

The Interdisciplinary Hubs show a consideration of fairness and equity that stands out as an example of good practice.<sup>83</sup> As well as investing time for co-developing proposals, the Hubs also demonstrated equitable governance structures. These governance structures and partnership expectations are formalised through: regular meetings of an executive team or committee that includes representatives from each partner; and partnership agreements, which also include ongoing review, as well as methods for dispute resolution and consideration of intellectual property and data ownership. Feedback from partners is collected both informally through regular meetings and also through feedback forms and surveys, which usually occur once a year. Across the Hubs, there has been an effort to pre-finance partners so as to reduce cashflow issues, although this was not without difficulty. Pre-financing has allowed Southern partners to complete project activities in a timely manner and with the proper staff and resourcing. Capacity strengthening and co-learning with Southern partners has been a focus, with a widening of Southern partner networks. There is a strong effort to include early career researchers in project management, both in leadership and in publication policy. Each Hub has plans for co-authorship of publications, as well as presentations at events and conferences.

### **Mainstreaming gender equality**

Hubs have also been exemplars in their consideration of issues related to gender, poverty and social inclusion. The Hubs have provided examples of more systematic and comprehensive support on strategic gender mainstreaming compared to the fund as a whole. Hubs have supported gender mainstreaming through access to a hub-wide 'gender champion', as well as a gender expert located at the Hubs' executive advisory board.<sup>84</sup> Hubs with an intersectional focus are more likely to integrate poverty analyses into their monitoring, reporting and dissemination of results – primarily through undertaking comprehensive ToC processes and defining multiple poverty-related terms, such as 'well-being', 'inequality', or 'capabilities'. In addition, some Hubs have proved able to access 'gender champions' as well as mandated gender experts in Executive Advisory Boards. Additionally, the 2019 guidance for gender monitoring and evaluation, focused on Hubs, specifically requests awardees to provide information about how each award has had an impact on EDI.

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<sup>83</sup> Fairness Assessment Technical Report, 2021, p.45.

<sup>84</sup> Relevance and Coherence Technical Report, 2021; GESIP Audit Technical Report, 2021, p.80.



### **Stronger reporting processes**

Hubs and UKSA IPP are examples of large programmes with more stringent and detailed reporting processes related to demonstrating the continued relevance of their awards to global or national priorities beyond the proposal stage.<sup>85</sup> These require award holders to demonstrate integration and coordination with other GCRF projects as well as the progress of global network development. This maintains a focus on the coherence of the projects. Additionally, Hubs and IPP are examples of systematic good practices for addressing gender equality concerns. These include UKSA's monitoring and evaluation (M&E) function, used to measure the impact of the IPP on gender equality at programme and project level (e.g. M&E Handbook 2020), and the Gender Monitoring and Evaluation Guidance provided by UKRI to assess the performance of Hubs in terms of gender equality aspirations.<sup>86</sup>

In the conclusions section, we explore some of the underlying factors and dynamics in the GCRF architecture and system that have enabled progress or constrained it, with the aim of identifying difficulties and areas of strength to build on and potential solutions.

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<sup>85</sup> Most DPs do not require award holders to demonstrate continued relevance, although it should be noted that all UKRI and Research Council awards are required to report annually on ResearchFish and for five years after the award is completed. This includes fields to capture data on collaborations and partnerships as well as engagement activities; but these fields are, in most cases, not mandatory, and award holders often provide limited detail.

<sup>86</sup> GESIP Audit Technical Report, 2021, p.80.

## 5. Conclusions: How and why has GCRF progressed (or not) in building the foundations for achieving development outcomes and impact, and where are the opportunities for improvement?

### Box 3. Summary of conclusions

In its first phase from 2016-2020, GCRF has shown itself to be an unprecedented investment by the UK government into research and innovation for development (R4D). Stage 1a of the evaluation has found that GCRF has the potential to be transformative as its ambition, but some risks require active management at the strategic level. In Stage 1a, the three assessments, together with the stand-alone Management Review, have demonstrated that GCRF has great transformative potential, and the many examples of strong and effective practice show how the portfolio is well-positioned to achieve the tangible development outcomes envisioned in its strategy and ToC. However, these strong practices now need to become more embedded and widespread to fully realise GCRF's impact potential.

We find that around half the spend in the portfolio is being implemented in ways that are consistent with an R4D challenge fund, concentrated in the large-scale signature investments. These are important strengths that demonstrate the clear progress that GCRF is making in terms of becoming relevant, coherent, well-targeted, fair, gender-sensitive and socially inclusive. However, progress is uneven across the portfolio, and gaps remain, especially around how poverty is addressed. This means that, after five years, approximately half of the portfolio is only partially aligned to addressing development challenges. A lack of mechanisms to promote internal coherence and connections between awards risk constraining GCRF's aggregate impact potential at scale. Our synthesis identified a number of dynamics and difficulties that, if left unaddressed, constrain this potential and, at worst, create a risk of potentially 'doing harm' to nascent R&I ecosystems and stakeholder communities in the Global South, by entrenching patterns of inclusion/exclusion and other inequalities. We find that, even with strong foundations in place in signature programmes and DPs, GCRF's transformative potential as a whole is constrained by three key dynamics:

- **Inconsistency in ensuring research excellence is always combined with development outcomes and wider considerations of equity, i.e. ODA excellence**, arising from the prioritisation of research excellence in commissioning but delegation to the research community of managing for development impact,

which gives rise to inconsistent approaches, affecting capacity building and partnerships and how fairness, gender, inclusion and poverty are addressed in awards. There is a need to develop an integrated concept of excellence for development research that is intended to have a clear use and impact from the start, framed as ‘ODA research excellence’.

- **Lack of portfolio-wide strategic overview, which constrains innovation and managing for development impact.** Without systems and processes to support a portfolio-wide view, GCRF risks funding a portfolio of research that cannot become greater than the sum of its parts, but which remains as isolated research projects and discrete networks, with innovation occurring in pockets and silos without transmitting the benefits of learning around how to address development challenges, or building capacity across the whole research ecosystem.
- **A Challenge Fund identity has not fully developed in GCRF,** mainly due to GCRF funding being channelled for the most part through existing DP systems and processes. This has led to fragmented and silo'd working, constraining a collective identity that could transcend DP and disciplinary silos, provide a centralised strategic direction and create a strong pull to leverage learning from innovations in how to address challenges and create transformative advances for development impact as a whole fund. We see this working in the signature investments, so there are strong opportunities to build on this across the whole fund.

GCRF's strategy, summarised in the introduction to this report, sets out a vision for how GCRF will catalyse a new wave of R&I to address development challenges, mobilising interdisciplinary partnerships, including researchers in the UK and LMICs who may not have previously considered their work applicable to development issues, with a view to building lasting R&I capabilities and infrastructures in LMICs to make practical progress towards achieving the SDGs.<sup>87</sup>

Given the scale of its investment in its first phase – £1 billion between 2016 and 2021 – GCRF has huge potential to drive global advances in multiple fields to address intractable and dynamic development challenges and build the international partnerships and networks necessary to sustain this effort.

In Stage 1a of the GCRF evaluation we have found multiple examples of success in building the foundations for innovative R&I with development impact, but our overall assessment is that GCRF's potential is being constrained by a number of fundamental challenges, which flow from its complicated and decentralised delivery architecture. If left unaddressed, these constraints will amplify the risks to GCRF of falling short of its vision and ambitions and, potentially,

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<sup>87</sup> BEIS, 2017. UK Strategy for the Global Challenges Research Fund.

causing some harms to nascent research ecosystems in the poorest countries and limiting opportunities to create transformative and lasting positive change.

This section discusses a range of underlying issues that our synthesis analysis of the three assessments of relevance and coherence, fairness and gender equality, and social inclusion and poverty, has identified as key constraints to GCRF's potential. The detailed evidence supporting these conclusions and the sub-themes is set out in Annex 3, together with the coding instruments used in the synthesis analysis.

### 5.1.1 Inconsistency in ensuring research excellence is always combined with development outcomes and wider considerations of equity, i.e. ODA excellence

**A key underlying constraint is the inheritance from the UK R&I system of a traditional, narrower view of research excellence in commissioning and managing for development impact. Examples of how this ODA excellence can be better integrated into the processes exist in some DPs and pockets of practice can be observed; however, structures, capacities and improvement processes to manage this across the fund do not currently exist. This creates risks that the opportunities to create new kinds of capacity – which was the ambition in the GCRF vision – may be missed.**

The ICAI review first pointed to a potential issues resulting from the GCRF's focus on research excellence (which 'may continue to advantage developing countries that already have credible research institutions') and its aim of capacity building, which would instead '[direct] investments towards poorer countries where capacity building may be most needed' (ICAI, 2017). The review recommended clearer priorities and approaches to research partnerships as a means to address these issues. The evaluation findings highlight the progress that has been made in implementing the ICAI recommendations, most notably in relation to equitable partnerships, but our findings highlight that sustained effort is needed to ensure that measures become embedded and sustained across GCRF as a whole.<sup>88</sup>

**At the moment in GCRF, 'excellence' is the standard for the quality of the research but 'compliance' is the standard for positioning for development impact, which is a minimum standard.** There a number of risks and challenges arising from this, which we shall unpack below. There are also trade-offs that need to be balanced through considered decisions as to the aims of the R&I activity and adopting appropriate strategies – for example, prioritising less established institutions in poorer countries with the aim of building capacity or prioritising more established institutions in wealthier countries with the aim of excellent research.<sup>89</sup>

However, this is not a zero-sum game – this is a creative tension. R4D requires a different framing of excellence, where high-quality research is designed with use and impact in mind,

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<sup>88</sup> HM Government Response to the Independent Commission for Aid Impact rapid review of the Global Challenges Research Fund: September 2017, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/655966/HMG\\_Response\\_to\\_ICAI\\_Rapid\\_Review\\_of\\_GCRF.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/655966/HMG_Response_to_ICAI_Rapid_Review_of_GCRF.pdf)

<sup>89</sup> Fairness Assessment Technical Report, 2021.

rather than viewing quality and impact as a trade-off.<sup>90</sup> There are gains to be made if this tension is navigated effectively, in terms of creating new kinds of development expertise and stakeholder relationships in the UK and the Global South to achieve ‘ODA research excellence’<sup>91</sup> (a type of ‘engaged excellence’),<sup>92</sup> an ambition that was clearly stated in the GCRF vision and strategy.

The three Stage 1a assessments show that the foundations for ‘ODA research excellence’ are certainly in place but are not spread consistently throughout the fund. The Stage 1a assessments found multiple examples across GCRF that demonstrate ODA research excellence in practice, with key examples highlighted in the Spotlight on Signature Investments (pg 35). These rich examples provide important foundations to build on in order to develop a) a more consistent set of practices for managing for both research excellence and development impact, and b) the structures and systems needed to promote continuous improvement of these as part of GCRF’s contribution to the field. However, the exemplars remain concentrated within clusters of DPs and pockets of practice, and so the potential for GCRF to deliver on this promise is constrained.

**The Haldane principle that informs how GCRF commissions R&I means that the responsibility for managing for development impact is shaped by DPs at programme level through guidance but delegated to award holders to implement, so the fundamentals of relevance, coherence, fairness, gender, inclusion and poverty are not consistently driven from a strategic level, leading to the variability in approaches and uneven delivery we have observed in the Stage 1a assessments; in this context, high-level strategic leadership is required to realise the benefits of diversity while providing the necessary strategic direction to achieve development impact.**

As noted earlier, GCRF works through a highly devolved structure through the DPs that was designed to ensure a level of independence for the UK research community, in accordance with the established principles that govern UK public funding for research. Central to public funding of research in the UK, and a constitutive act for GCRF, is the ‘Haldane principle’, which

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<sup>90</sup> See, for example, McLean, R. K. D. and Sen, K., 2019. Making a Difference in the Real World? A Meta-analysis of the Quality of Use-oriented Research Using the *Research Quality Plus* Approach. *Research Evaluation* **28**(2), pp.123–135. Available at: <https://doi.org/10.1093/reseval/rvy026>

<sup>91</sup> ‘ODA research excellence’ is a working concept used in the GCRF evaluation to describe the quality of approaches used to manage research for development impact, e.g. integrating a focus on gender, inclusion and poverty, fairness, relevance and coherence into the design and delivery of R&I projects. We would like GCRF to aim for a standard of ‘excellence’ on both.

<sup>92</sup> The Institute of Development Studies (IDS) defines ‘engaged excellence’ as follows: ‘This is where the high quality of work (excellence) is dependent upon it linking to and involving those who are at the heart of the change we wish to see (engaged). [...] Four pillars of engaged excellence are identified as delivering high quality research; co-constructing knowledge; mobilising impact-orientated evidence, and building enduring partnerships’. Leach, M., Gaventa, J. and Oswald, K., 2016. Engaged Excellence. *IDS Bulletin* **47**(6). Available at: <https://www.ids.ac.uk/publications/engaged-excellence/>

ensures that decisions made about research funding are made by experts in the field<sup>93</sup> and which was enshrined in law in the March 2017 Higher Education and Research Act.<sup>94</sup>

In essence, the Haldane approach creates an expert researcher-led system, which incentivises innovation and diversity but creates a tension with GCRF's aim to create a large-scale, integrated portfolio of research that is 'diverse but balanced [...] with the common feature that they all in some way address the research agenda for enabling change and the SDGs, and, reflecting the BEIS ODA statement of intent, maximise the practical impact of research and innovation to improve the lives and opportunities of the global poor. [GCRF needs to] take an integrated approach that includes a wide range of research and innovation, people and partnerships'.<sup>95</sup>

The challenge for GCRF is to maintain the benefits of diversity and innovation that a large-scale devolved system brings while providing the necessary strategic direction, prioritisation, coherence and integration to support GCRF's ambitions.

The Stage 1a assessments have found that while DPs have robust systems for supporting excellent research in open competition through peer review, what is less consistently embedded is an integrated focus on the fundamentals of managing for development impact, including GESIP concerns, fairness, and coherence, key dimensions of research for development expressed in GCRF's ToC.

In a large, devolved, researcher-led system, high-level strategic leadership – supported by effective coordination and improvement structures – is required to integrate the fundamentals for positioning R&I for development impact. There have been notable successes in some parts of the GCRF portfolio as a result of large-scale strategic initiatives, initiated by BEIS, such as the focus on equitable partnerships, establishment of challenge portfolios and the introduction of Challenge Leaders (although mainly working within UKRI portfolios<sup>96</sup>), involvement of peer reviewers from the Global South, and the growing momentum around gender equality (see Boxes 4 and 5). In 2021 (the final year of phase one of GCRF) BEIS is in the process of developing a fund-wide gender strategy that aims to formalise the accountabilities and requirements on GE across all GCRF DPs. However, the Stage 1a assessments found that these efforts have remained limited with clusters of DPs (notably the Research Councils) and have had inconsistent effectiveness as a result of being somewhat 'superimposed' on the

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<sup>93</sup> UKRI. Haldane: The Principle. Available at:

<https://webarchive.nationalarchives.gov.uk/20200923112820/https://www.ukri.org/research/themes-and-programmes/haldane/>

<sup>94</sup> UK Parliament, 2017. Higher Education and Research Act 2017. Amendments tabled February 2017. Government amendments 189 to 191 make changes to clause 99 to enshrine the Haldane 23 Principle in law and require the secretary of state to have regard to the principle when making grants or directions to the research councils. Information is available online at: <http://services.parliament.uk/bills/2016-17/highereducationandresearch.html>

<sup>95</sup> BEIS, 2017. UK Strategy for the Global Challenges Research Fund (GCRF), pp.5–6. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf)

<sup>96</sup> Challenges Leaders will be examined in more detail in the next stage of the evaluation (stage 1b) as one of the process evaluations of six signature investments in the GCRF portfolio



existing diverse system.<sup>97</sup> The example of gender mainstreaming (Box 4) highlights the slow and uneven pace of evolution in a system as decentralised as GCRF on a fundamental concern for research aiming for development impact.

The challenges of bringing focused and coordinated strategic action around the fundamentals of development impact in a complicated, devolved system are illustrated by the gradual but growing focus on gender equality, highlighted in the GESIP assessment (see Box 4).

#### **Box 4. Integrating a gender equality focus in GCRF – a timeline**

Although integrating a gender focus was identified as a core concern at the start of the fund in 2017, the GESIP review of DP-level documentation finds that gender equality (GE) discussions start becoming more evident only from 2019. UKRI introduced mandatory GE statements, reporting requirements and guidance early in 2019, which, stakeholders suggested, was a response to a combination of the ICAI review (2017), the International Development (Gender Equality) Act (2014) and internal appetite amongst European and US colleagues. UKRI's GE compliance process has also led to some institutions (Edinburgh University, School of Oriental & African Studies and Imperial College) developing guidance for applicants on how to satisfy the GE compliance requirement. The guidance offers more detail on why GE is relevant to GCRF research (beyond ODA compliance) and how researchers can better integrate GE understanding/analysis into their work in ways that go beyond equal participation and impact. This guidance has been diffused via workshops to some clusters of award holders, but awareness of it is not widespread.

Alongside UKRI, UKSA, MRC, BA and RAEng are also developing policies and processes explicitly in order to address GE within the context of GCRF. For example, UKSA's internal governance for the GCRF-funded portfolio explicitly highlights the need to be ODA-compliant, including through contributions to enhancing GE. However, at the other end of the spectrum, several DPs demonstrated little evidence of developing substantial systems for engaging with GE concerns. Indeed, a significant number of DP strategy/policy-level documents reviewed (strategic plans, delivery plans) were effectively gender-blind, with no specific engagement with or references to GE. In 2021 (the final year of phase one of GCRF) BEIS is in the process of developing a fund-wide gender strategy that aims to formalise the accountabilities and requirements on GE across all GCRF DPs. The example of gender mainstreaming highlights the slow and uneven pace of evolution in a system as decentralised as GCRF on a fundamental concern for research aiming for development impact.

Source: GESIP Assessment Technical Report, 2021.

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<sup>97</sup> Relevance, Fairness, GESIP Assessments, Technical Reports, 2021.

**The devolution to DPs and award holders has led to a diversity of approaches, many of which are clearly strong practices, with a common focus on bringing strategic development expertise into the call and commissioning process to scrutinise and embed core requirements. However, outside of the signature investments, this focus is not sustained throughout awards, nor are good practices shared more widely across the fund.**

GCRF uses a wide array of funding mechanisms, from small-scale to large-scale investments. 'Open calls' have been common across the fund, in keeping with the Haldane principle. These can be any topic or theme and are not guided by specific global or local challenges but, instead, often emphasised interdisciplinary research across broad topic areas. For example, the Growing Research Capacities (GROW) Programme (launched in 2016) required applicants to frame their project around up to three development challenges in the UK Aid Strategy and/or the SDGs, with applicants free to identify any constellation of challenges or SDGs they wished. Similarly, the challenge-led grants scheme within the Resilient Futures programme (launched in 2017) invited proposals cutting across multiple disciplines and thematic areas. While this diversity is a source of strength in the portfolio, how to bring consistency of approaches and drive improvements remains a challenge.

In all three assessments, the importance of the call and selection process appears as the primary point at which issues of relevance and the other fundamentals for development impact are scrutinised and strengthened. Call documents were described as 'one of the most powerful tools' to influence how applications are developed and framed.<sup>98</sup> Panels and interviews are another strong mechanism to scrutinise proposals for relevance, fairness and gender, SI/EDI and poverty issues; however, this relies on GCRF having access to experts and stakeholders with wide thematic and geographical expertise and experience to provide this challenge. The Stage 1a assessments found a wide range of measures and improvements in terms of how development expertise is integrated into GCRF's strategic management, agenda-setting, award selection and other processes, although there remains considerable variation and lack of coordination across DPs and award holders in terms of international development experience and skillsets. Two examples are provided in Box 5. Other improvement measures include partnerships with specialist agencies, institutional partnerships, SI/EDI advisory bodies and individual experts brought in by award teams.<sup>99</sup>

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<sup>98</sup> Fairness Assessment Technical Report, 2021.

<sup>99</sup> Relevance and Coherence, Fairness Assessment and GESIP Audit Technical Reports, 2021.



### Box 5. Diversity, expertise and participation in call processes

The **Applied Global Health Research Board** established by the MRC appears as an interesting example of ‘upstream’ involvement of Southern perspectives in the prioritisation of GCRF funding. The Board includes several members affiliated with institutions in Africa (6), Latin America (2) and Asia (3), along with institutions in the UK (15) and the United States (1). The Board is responsible for allocating MRC’s GCRF funding, emphasising capacity building and equal partnership between UK and LMIC counterparts.<sup>100</sup>

Another important development has been the establishment by UKRI of the **International Development Peer Review College**, highlighted in the fairness assessment.<sup>101</sup> This is a pool of around 300 global academics, researchers, policymakers, and NGO and charity ODA experts,<sup>102</sup> 90% of whom are from DAC list recipient countries<sup>103</sup> (with a target for this to grow to 95%+ and with applications exclusively from DAC countries being accepted since 2019). The college provides peer review of applications for GCRF and other ODA-funded calls within UKRI. Specific aims of the College are to:

- ensure that DAC list countries’ perspectives are a key part of the peer review of GCRF calls (as well as other ODA calls).
- build on GCRF’s aim of fair and equitable partnerships in decision making processes.
- facilitate closer engagement with peer reviewers from the Global South to provide training and capacity building in interdisciplinary peer review.<sup>104</sup>

The main area of strategic development expertise that remains under-invested in is poverty reduction. GESIP assessment findings indicate that there is neither a requirement nor an expectation within the GCRF system to define or outline the expertise and resources available to address poverty issues. Poverty reduction seems to be viewed as implicit in the nature of the R&I being funded, and poverty expertise is not routinely brought into DPs’ call, appraisal or selection processes. Nevertheless, there was evidence that most award holders take some steps towards consulting with poverty experts or including a poverty specialist in the team.<sup>105</sup>

In practice the three assessments found that, whether on gender equality, relevance and coherence, or fairness, the organic approaches initiated by DPs have not yet been systematically coordinated, leading to a wide range of strategies, policies and systems for building in the foundations for development impact.<sup>106</sup> Without shared strategic frameworks at fund level, led and coordinated by BEIS, although DP-specific guidance is demonstrably

<sup>100</sup> Management Review Report, 2021.

<sup>101</sup> Fairness Assessment Technical Report, 2021.

<sup>102</sup> UKRI, 2020. International Development Peer Review College. Available at: <https://www.ukri.org/apply-for-funding/how-we-make-decisions/international-development-peer-review-college/>

<sup>103</sup> Ibid., Annex B2.

<sup>104</sup> Ibid.

<sup>105</sup> GESIP Audit Technical Report, 2021.

<sup>106</sup> Relevance and Coherence, Fairness Assessment and GESIP Audit Technical Reports, 2021.

strong, the diversity starts to fragment the way in which awards approach the implementation of core concerns within their proposals. Fragmented guidance means that award holders often apply their own framing and understanding of the various criteria, whether on ODA compliance, aligning with SDGs or gender equality and SI/EDI issues.<sup>107</sup> The inclinations, expertise and experience in the team and their partners become the more decisive factors in whether and how the foundations for development impact are addressed in awards. This makes it difficult to assess the extent to which the ToC assumption around interest and demand for solutions from in-country stakeholders holds true – since in many cases these stakeholders are playing a limited or indirect role in priority setting and award development.

The inherent devolved responsibility for the design and management of programmes<sup>108</sup> means that the fundamentals for development impact are not led consistently from the highest, strategic levels of the fund and reinforced at appropriate levels. There are multiple opportunities to build on where there has been clear progress, and it is clear that top-level prioritisation can generate traction across the GCRF R&I system. But the lack of systems to track and improve performance on the fundamentals means that progress is slow and inconsistent, and exemplary practices remain in silos and clusters.<sup>109</sup> Without a strong, strategic and continuous focus on the fundamentals of impact, there is a risk that the development impact and ODA excellence expected by GCRF may not be met.

**Equitable partnerships have been the main strategy to deliver both on capacity building and development impact; although this is a strong foundation, capacity building results have been inconsistent because it is approached in an ad hoc way; the tension between research excellence and capacity building remains implicit.** There has been a strong strategic focus on equitable partnerships as a cornerstone of the fund, both as a means to deliver excellent, relevant and impactful research, and as a way of building long-term capacity of researchers and institutions. Various strategic initiatives discussed previously, such as the coordinated efforts on equitable partnerships and the growing focus on gender equality, have moved GCRF through a significant learning curve, and the three module reports highlighted a range of evidence to say that GCRF is much more advanced in its thinking and approaches to equitable partnerships than at the start of the fund (see Box 2).<sup>110</sup>

However, the fairness assessment found that, within partnerships, capacity strengthening is still approached in a rather ad hoc fashion (through discrete activities such as training workshops), rather than adopting a more holistic concept of mutual capacity building.<sup>111</sup>

Building new capacities, skill sets and expertise for challenge-led R&I among both UK and LMIC researchers is an explicit ambition in the GCRF strategy, but the assessments found that capacity development is largely implicit in partnerships, and often viewed as flowing from the

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<sup>107</sup> GESIP Audit Technical Report, 2021.

<sup>108</sup> Which derives from the Haldane Principle

<sup>109</sup> GESIP Audit Technical Report, 2021.

<sup>110</sup> Fairness Assessment Technical Report, 2021.

<sup>111</sup> Fairness Assessment Technical Report, 2021.

UK to developing countries. Mutual capacity building was envisioned in the strategy and ToC as a cornerstone of the GCRF strategy:

‘The GCRF aims to build UK and global development research capacity and capability by forging strong and enduring partnerships between academic communities in the UK and the Global South and by enhancing the research and innovation capacity of both’.<sup>112</sup>

The vision was to drive forward the field to create new kinds of development research and innovation expertise, in the UK as well as in LMICs. As outlined in Box 6 and Box 2, the FLAIR and UKRI–ARUA programmes provide examples where capacity building has been addressed and potential models (e.g. the ‘hub and spoke’ model) that could be built upon.

### **Box 6. FLAIR fellowship scheme – a possible model for capacity strengthening**

The FLAIR fellowship scheme was launched in 2018 as a collaboration of the Royal Society and the AAS. Specific objectives of FLAIR are:

1. *Developing Africa’s next generation of research leaders* – supporting talented early career African researchers to become leaders in their chosen discipline.
2. *Supporting excellent research* – enabling African researchers to address areas of global significance across the natural sciences through high-quality research, advancing knowledge and innovation, which aims to benefit their country and address aspects of the SDGs.
3. *Enhancing research environments* – working through relevant partners, contributing towards institutional research capacity strengthening and establishing good financial grant practice in African universities and research institutions.
4. *Fostering collaboration and impact* – establishing mutually beneficial long-term links between African Fellows and relevant UK researchers to harness the expertise of the UK research base through equitable partnerships, and enhancing knowledge exchange and translation into sustainable policy and practical benefits.

FLAIR targets talented early career researchers, who are nationals of sub-Saharan African countries and wish to work in a research position in a sub-Saharan African host institution. Research proposals must be within the Royal Society’s remit of natural sciences, be ODA-compliant and focus on GCRF challenge areas. Host institutions must meet a series of criteria in terms of logistical and mentoring support to the Fellows, and allow them to focus on their research, with limited teaching responsibilities and no administrative duties. In addition, FLAIR aims at providing Fellows with training, mentoring and networking support. In so doing, FLAIR directly addresses well-known challenges for African early career researchers, including: lack of funding; lack of time to focus on research because of

<sup>112</sup> BEIS, 2017. UK Strategy for the Global Challenges Research Fund (GCRF), p.6. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623825/global-challenges-research-fund-gcrf-strategy.pdf)

competing teaching and administrative requirements; lack of mentoring; and difficulties related to travel and attending conferences. Two cohorts of Fellows have been funded so far, in 2019 and 2020 respectively.

Source: Fairness Assessment Technical Report 2021.

**The devolved model means that the implementation of equitable partnerships cascades to award holders and their institutions, which has led to uneven approaches and some negative financial impacts on partners in the Global South through administrative arrangements that do not take account of the constrained resource base of LMIC institutions.** All assessments found examples of excellence in partnership working, led by award holders and their partners. These examples highlight how the right partnerships and ways of working can be a key pathway to development impact and benefits for communities. One example is described in Box 7, where a partnership between both academic and civil society organisations has mobilised an inclusive network of stakeholders, with the intended beneficiaries, young women, at the centre of the work.

#### **Box 7. The gendered price of precarity: workplace sexual harassment and young women's agency**

Funded via the BA's Youth Futures call, this GCRF project aims to contribute to promoting gender equality, especially by preventing workplace gender-based violence faced by young women working in formal agro-processing firms and informal jobs in urban Bangladesh and Uganda. Partnership between the IDS-based Principal Investigator (PI) and Co-Investigators (Co-Is) is strong, genuine, and generally equitable – which is attributed partly to the PI's own way of working, but also to IDS's wider institutional reputation, systems and approach. The project drew on existing relationships between partners and stakeholders, and formalised partnership principles were drafted in the proposal to ensure equitable collaboration and communication. The three Co-Is interviewed expressed a strong sense of autonomy and an ability to drive the project from their end, with trust built up between partners from previous work together. This is important because the lead partner organisation in each country (Makerere University in Uganda and the BRAC Institute of Governance and Development in Bangladesh) are leading on almost all stakeholder engagement, leveraging their own extensive networks including NGOs, CSOs and government authorities.

The qualitative approach adopted in this project pays specific attention to everyday language on workplace sexual harassment and the role of sociocultural norms, using cooperative inquiry with youth researchers involved in Youth Research Teams in both countries, to ensure young people's central involvement in the study and the inclusion of their perspectives on solutions. During the proposal development stage, the Southern partners suggested the inclusion of 'Safety Audits' and 'Body Mapping' methods and recommended

civil society partners, who nominated youth researchers in each country. The youth representatives are seen as ‘target groups reps, partners and a sounding board all rolled into one’ and the management team try to empower and include the youth representatives wherever possible. This includes them choosing the specific research questions to focus on in that country setting, conducting research of their own supported by Co-Is, and playing a key role in relation to stakeholder engagement towards the end of the project. In this way, this project highlights how equitable partnership with formal academic partners led to more meaningful engagement with local communities/potential beneficiaries, all of which might reasonably be expected to enhance the beneficiary-level relevance and inclusivity of the findings produced.

Source: GESIP Assessment, technical Report, 2021

The fairness assessment found a range of partnership agreements and practices around equitable partnerships, with the strongest practices seen in the UKRI Hubs and the UKSA IPP programme, including equitable development of project design and management shared between partners. Administrative and financial requirements are widely perceived to present challenges to equitable and fair processes. Procedures and requirements arise from a layered combination of UK-wide legislation, DP requirements and UK institution processes, and include due diligence requirements and the need to accept payment in arrears, which creates an onerous burden for LMIC partners, even well-established ones.<sup>113</sup> Payment of 100% of full economic costs to LMIC partners is an important recognition of their smaller resource base; however, the common practice of making payment in arrears undermines this, as it presents huge cash flow problems to institutions that do not have the reserves. Some UK partners have been able to facilitate pre-financing to mitigate this, but noted the additional administrative burden.<sup>114</sup>

The fairness assessment found that due diligence created delays to forming partnership agreements, which meant that Southern partners could not get paid (even when care had been taken to do pre-financing, i.e. in Water Hub and Ocean Hub). In some instances, due diligence also excluded some community-level organisations that would otherwise have been involved as partners. Due diligence requirements are the main challenge for engaging smaller organisations, and also government or quasi-state entities are prohibited from receiving funds. However, UK universities are also affected, as many administrative teams lack experience with ODA-funded research and may impose inappropriate measures. While some due diligence processes are legally required and are not possible to change, solutions to mitigate the impact of them on smaller partners in LMICs, such as pre-financing, are possible.

A number of GCRF funding calls have been opened to Southern lead applicants, which is an important step, since limiting applicants to UK PIs was widely acknowledged as a key obstacle

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<sup>113</sup> Fairness Assessment Technical Report, 2021.

<sup>114</sup> Ibid.

to fairness and equity in GCRF. Similarly, a number of funding calls have been launched with a specific focus on partnership development, which should (over time) help to create the time and space necessary for partners to build more equitable relationships.<sup>115</sup>

The analysis of partnerships agreements in the fairness assessment showed a range of approaches, and few consistent elements.<sup>116</sup> Generally, these agreements are the domain of administrative staff, so, although they may shape day-to-day interactions, the provisions are not widely known in the implementing teams.<sup>117</sup>

The ability to navigate financial and administrative requirements to work effectively with partners in the Global South is shaped by institutions' existing capacities to support ODA-funded R&I. Institutions that have been supporting this work for a number of years have established approaches to facilitate working with partners, whereas newer entrants need to make considerable investments of administrative time and may be unaware of the realities of resource-constrained institutions in the Global South. This uneven practice is the result of the devolved approach and has real-world impacts on less-resourced institutions and organisations in the Global South seeking to partner with the UK.

**Overall, while there are clusters of good and effective practice in partnership working and capacity building, the tensions between research excellence and managing for development impact are constraining GCRF's potential.** Equitable partnerships are a major success of the programme and, when done well, present a key building block for development impact, and a major opportunity for building the lasting new capacities in GCRF's vision.<sup>118</sup> Partnership practice that represents ODA research excellence can be seen in the Hubs, GROW, FLAIR and IPP programmes, but in other programmes and awards it is much less consistent. Reflecting on the ToC, some of the assumptions underlying the transition from activities to results rely on researchers, innovators and LMIC partners working together – whether to identify priorities or mobilise coalitions for uptake. Limitations in effective partnership working will probably be hampering the ability of the fund to realise these aims and deliver on its mandate. The insights from the Stage 1a assessments suggest that, to realise the ambition, more is needed alongside partnerships to ensure that the foundations for development impact are in place. Coordinated strategic initiatives are needed from DPs and fund management to help navigate the tensions between research excellence and development impact, finding ways to engage less-resourced institutions in LICs, and ensuring consistency in how gender, inclusion and poverty are addressed in awards.

### 5.1.2 Lack of portfolio-wide strategic overview constrains innovation and managing for development impact

GCRF's broad geographical reach is one of its unique features, along with the capacity to fund a diverse range of research topics that are broadly framed around challenge areas and tied to

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<sup>115</sup> Ibid.

<sup>116</sup> Ibid.

<sup>117</sup> Ibid.

<sup>118</sup> Ibid.



the SDGs being delivered by the numerous DPs. The heterogeneity within the portfolio creates significant opportunities for innovation. The potential of GCRF to test and learn from a wide variety of innovative research themes and approaches can be realised if there are systems and processes in place to gain a portfolio-wide view of challenge-based research, and to bring related cohorts within the portfolio together to connect and foster learning around how to deliver challenge-led research with impact, and around what works and what does not. This is in line with the ToC assumption that learning feeds back into commissioning. Without these systems and processes in place, GCRF risks funding a portfolio of research that cannot become greater than the sum of its parts, constrained by isolated research projects and discrete networks, with innovation occurring in pockets and silos without transmitting the benefits of learning around how to address development challenges or building capacity across the whole research ecosystem. This would represent a missed opportunity to capitalise on the significant potential of the GCRF fund, as well as a risk in both compartmentalising learning and entrenching the advantage of experience for those benefiting from increased knowledge of challenge-led research. It also creates wider risks in distorting research ecosystems, maintaining the advantage of the well-established institutions and networks, including those in the Global South. To deliver on its ambitions, GCRF needs to be able to both see across its investments and actively manage the portfolio, to harvest the innovations and develop mechanisms to share learning to build capacities of researchers in delivering on development challenges.

**Fund-wide efforts to support coherence within portfolios have improved, but gaps remain in bringing cohorts together to connect, particularly outside of large programmes, to showcase innovation, share learning to build capacity in delivering development outcomes, and mainstream good practices.**

In recent years GCRF has made progress in bringing related cohorts together to support thematic alignment of investments and avoid duplication of effort.<sup>119</sup> Establishing challenge portfolios, undertaking landscape mapping, and working – to varying degrees – with stakeholders beyond academia and in LMICs to build networks and collaborate to help frame unresolved challenges are steps forward in developing a more coherent structure and view of the portfolio. Examples include the Collective Programme, launched by BEIS in 2020, which involved a portfolio analysis of over 700 awards to identify gaps and opportunities across portfolios (see Spotlight in Section 4.1.4). The Challenge Leaders have played a role in improved coherence, mapping portfolios and supporting thematic alignment of investments, but their role does not at present seem to expand systematically beyond UKRI to include all DPs.<sup>120</sup> Examples of systematic and formalised approaches to mapping portfolios are seen in large-scale GCRF programmes such as the Collective Programme and UKSA IPP (see Spotlight in Section 4.1.4), including large-scale portfolio mapping to identify clusters of investments, gaps and opportunities – demonstrating that the capacity exists to do this in line with the ToC assumptions – yet these are not widespread across the fund as a whole.

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<sup>119</sup> Relevance and Coherence Assessment Report, 2021.

<sup>120</sup> Relevance and Coherence Technical Report, 2021.

Programme-wide networking events, workshops, cohort meetings and round-table events provide mechanisms for connecting projects within and across GCRF, but there is little evidence of these influencing practice, leading to new collaborations or identifying synergies; rather, they act as informal forums for lesson sharing between awards. Other forums to connect include conferences or participating in other network meetings and drawing on advisory bodies to promote linkages to other relevant initiatives and experts. Most awards in the relevance sample were aware of potential interconnections with other projects, but they had not actively engaged with them to inform their research approaches. While such existing mechanisms enable connections, they are not seen to encourage wider development of synergies or collaborations across investments. Some award holders within the relevance sample felt that their awards were ‘unique’, addressed a research gap, or that there were no other relevant initiatives to engage with. This points to some potential gaps in how coherence – and its importance for development impact – is understood at portfolio level.

At fund level, our fairness module finds that UKRI has played a leading role towards improving fairness, equity and representativeness of GRCF partnerships. One example of UKRI bringing cohorts together to share learning is a workshop across GCRF and the Newton Fund, which aimed to share good practices around promoting and sustaining equitable partnerships. The discussion informed the UKRI Equitable Partnerships Good Practice Handbook (2019), which was then shared across both funds and other ODA-funded R4D programmes.<sup>121</sup> This example demonstrates that mechanisms to support collaboration, learning and consistency are potentially available within the fund, yet this mechanism does not appear to be systematically used to support horizontal learning. Other supporting functions at fund level designed to improve coherence and avoid duplication across HMG include the Strategic Coherence of ODA-funded Research (SCOR) Board and HMG Research Development roadmap, yet our work on research relevance did not find evidence of this informing approaches within GCRF specifically.

**All three modules find that while good and innovative practice in research delivering on development challenges is evident within the portfolio, sharing and learning from these examples is limited, occurring mainly within individual projects, shared via immediate networks, or evident within the large programmes.**

The Spotlight (see Section 4.1.4) sets out some examples of good practice around integrating a dual focus on research excellence and development impact. The size of the investment may limit applicability in smaller-scale investments, yet there is scope for learning from the approaches taken here. DPs also differ in their approaches and capacity to support gender and equality topics, with SFC, MRC, Innovate UK and UKRI all having different tools to support researchers.

At award level, the GESIP module finds that there is a small number of very experienced award holders familiar with the GCRF ecosystem, who are able to tap into tacit networks and

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<sup>121</sup> Fairness Assessment Technical Report, 2021.



engage in horizontal learning activities to promote gender mainstreaming.<sup>122</sup> There are several examples of these ‘pockets’ of learning within the portfolio, identifying organic, opportunistic or ad hoc opportunities to share lessons learned in relation to improving gender-responsiveness of their awards, in building bi-directional learning and capacity building in SI/EDI expertise. Box 8 describes one example: the University of Edinburgh’s gender equality toolkit.

### **Box 8. University of Edinburgh – gender equality toolkit**

As part of the genderED project, funded as an award within GCRF, the University of Edinburgh developed a gender equality toolkit for GCRF work. The toolkit provides guidance on the GE required by UKRI. It lays out the GE statement assessment criteria, provides background and context on the ODA rationale, and highlights why GE is relevant to GCRF research. Case studies are also used to illustrate key points (e.g. the links between poverty and gender inequality).

To aid thinking about the degrees to which GE can be integrated into research, the toolkit borrows Oxfam’s rubric for integrating GE, which ranges from gender-blind to gender-transformative. The toolkit therefore provides guidance on how to consider GE at multiple levels: i) project conceptualisation; ii) equal and meaningful participation in the project; iii) gender in impact and dissemination; and iv) monitoring risks. Each stage is accompanied by practical examples for illustration.

The toolkit has been disseminated through workshops to various clusters of award holders, supported by the funder, SCF. However, our modules found that it has not reached a wider group across UKRI or GCRF more broadly, and could benefit from being promoted across GCRF, along with other gender equality resources produced by other awards and funders.<sup>123</sup>

We find that while there are examples of innovative practice and relevant research expertise in how to support development objectives within the fund, mechanisms are not in place to share widely the lessons learned about experiences and approaches for achieving development outcomes across the portfolio.<sup>124</sup> There are promising ventures within GCRF, including the UKRI’s Gender Equality Statements and the gender equality toolkit developed by Edinburgh University, that could be scaled to support gender mainstreaming (as discussed in Box 8).<sup>125</sup> A promising example of building more equitable partnerships is demonstrated through ARUA, which has engaged Southern researchers in the design of the research rather than at later stages in the process where engagement is more tokenistic (see Box 2). There is a variety of

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<sup>122</sup> GESIP Audit Technical Report, 2021.

<sup>123</sup> Cavaghan, R. and Mackay, F., 2020. Developing Your GCRF Gender Equality Statement. University of Edinburgh. Available at:

[https://www.ed.ac.uk/files/atoms/files/toolkit\\_developing\\_your\\_gcrf\\_gender\\_equality\\_statement.pdf](https://www.ed.ac.uk/files/atoms/files/toolkit_developing_your_gcrf_gender_equality_statement.pdf)

<sup>124</sup> Relevance and Coherence Technical Report, 2021.

<sup>125</sup> GESIP Audit Technical Report, 2021.

approaches that provide examples that others could benefit from, if the mechanisms to share learning were in place to expand their influence and build the capacity of others to implement more relevant, fair or gender-responsive approaches.<sup>126</sup>

**Mechanisms for monitoring and reporting are insufficiently tailored to capture the dimensions of development issues, leading to ad hoc monitoring systems and inconsistent data across the fund.** Within GCRF there are criteria for ensuring that some of the essential attributes for research to achieve development impact are in place, including: relevance; fairness (equitable partnerships); gender; and SI/EDI. Largely this takes place at the award proposal and selection stages through robust processes, but there are limited mechanisms for ongoing compliance, accountability and monitoring of ODA-relevant issues.<sup>127</sup>

Existing mechanisms include the BEIS tracker, which captures indicators for both gender and SI/EDI. However, these are fairly one-dimensional and inconsistently used, as there has not been a process to support its use by DPs in their reporting. The GESIP assessment found that the Gender with Age marker (GAM) is not capturing the likely gender focus of some awards in the GESIP sample (including those with gender in the title), suggesting that the marker requires maintenance and review. Further, a current limitation of the ODA metrics within the tracker is the inability to differentiate between awards' teaming arrangements and their research content – and, indeed, their performance (e.g. in gender-responsiveness) as opposed to the framing of the awards. In addition, there are some mechanisms to capture social inclusion data, but these are not systematic across the fund. UKRI's annual diversity data is one example, but there are other discrete examples among DPs of capturing SI/EDI data – for example AHRC, which plans to use their data to improve diversity within the institution. For gender-specific monitoring there exists a variety of mechanisms across some, but not all of the DPs, for capturing gender equality.<sup>128</sup>

**Existing systems support compliance around central issues within the fund, but are insufficiently dynamic or consistent to promote bi-directional or horizontal learning and enhance development excellence.** Mechanisms include Gender Equality Statements, which have seen improved promotion, uptake and completion since 2019. UKRI has developed a policy framework, and UKSA's M&E function measures the impact of IPP on gender equality at programme and project levels. These DPs, along with a selection of other institutions, have engaged in cascading and sharing learning towards improving interests in gender equality concerns across the fund. This has created space for best practices and understandings to be shared horizontally, and demonstrates that gains can be made when such concerns are elevated as a central focus of the fund. However, the lack of systematic data capture is a constraint across the fund, leading to significant variation in how strategies related to, for example, gender mainstreaming are conceived and promoted.<sup>129</sup>

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<sup>126</sup> Ibid.

<sup>127</sup> Relevance and Coherence and GESIP Audit Technical Reports, 2021..

<sup>128</sup> GESIP Audit Technical Report, 2021.

<sup>129</sup> Ibid.

For issues that appear to be less centrally mainstreamed, there are, for example, EDI statements for some DPs, but requests appear to be made for these ad hoc. For poverty issues, while narrative reporting introduced in mid-2020 has allowed for their increased visibility, there is no coherent mechanism for unpacking poverty or mapping how GCRF is contributing to pro-poor outcomes, leading to an under-reporting of poverty results and outcomes. More widely, in addition to poverty and EDI, other development fundamentals, including coherence and broader concepts of fairness (beyond equitable partnerships),<sup>130</sup> are not captured in reporting requirements outside of the flagship programmes. UKSA IPP is a notable exception in including criteria for coherence, with various mechanisms in place to avoid duplication of effort, including a 'discovery phase' to incorporate political economy analyses and establish the needs of stakeholders within the context.<sup>131</sup>

It is notable that in some cases, under-reporting of development issues does not necessarily mean a lack of available data. There are examples of ad hoc monitoring systems developed by DPs and awards to capture disaggregated data, driven by DPs and award holders themselves. For example, the GESIP module finds that while some DPs hold poverty data, the mechanisms and incentives for upward reporting on the multi-dimensions of poverty are not in place across the fund.<sup>132</sup> Tracking progress on development issues is complicated by a lack of comparable data sets across DPs. Existing reporting systems also capture some important development dimensions and not others. For example, ResearchFish includes fields on collaborations, partnerships and engagement, but most of these fields are not mandatory, and awards holders often provide limited detail.<sup>133</sup> These gaps in management information systems and data make it challenging to manage for development impact at portfolio level.

**More complex disaggregation of ODA issues is required to unpack dimensions of development concepts such as poverty, fairness, relevance and social inclusion, to provide meaningful categories to support improved data capture and analysis.** At least some of the existing lack of granularity in ODA metrics may stem from a lack of shared understanding of these issues. For example, across the fund there is no shared understanding of what it means to be 'fair' or how fairness might be achieved in practice. While most learning within GCRF has focused on equitable partnerships, with consequent improvements in mainstreaming understanding of this aspect of fairness, other aspects – including interaction with research participants and communities, and impacts on the context – are often absent.<sup>134</sup> There are also some fragmented examples of DPs taking steps to define and frame poverty, including as part of the Gender Equality Toolkit, which defined interconnections between poverty and gender equality. These are not widespread, and there is limited evidence of coherent framing of poverty or poverty alleviation as guidance within GCRF.<sup>135</sup>

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<sup>130</sup> Fairness Assessment Technical Report, 2021.

<sup>131</sup> Relevance and Coherence Technical Report, 2021.

<sup>132</sup> GESIP Audit Technical Report, 2021.

<sup>133</sup> Fairness Assessment Technical Report, 2021.

<sup>134</sup> Ibid.

<sup>135</sup> GESIP Audit Technical Report, 2021.

Within this fragmented picture, there are opportunities to build on existing workshops and events undertaken among DPs and awards that may offer insights into how development issues are being addressed. The new RODA system can be developed to support improve disaggregation and nuance in the monitoring of ODA issues across the fund, and presents an important piece of the architecture to learn from existing challenges. However, while RODA should enable better capture of data across the portfolio, additional management and learning processes are required to support proactive management of the portfolio, identify and share good practices to support learning around how to achieve development outcomes.

**Beyond the need for improved framing, nuance and better capture of development issues within monitoring data, there is a lack of ongoing reporting to ensure continued compliance and support accountability, as well as to provide feedback to promote bi-directional learning.** Reporting systems are presently relatively static and one-directional, more focused on compliance at the proposal stage than monitoring to support ODA research excellence in delivery. Notable exceptions include the large flagship programmes, such as Hubs and UKSA IPP, that have more detailed monitoring and reporting processes at key stages throughout the lifetime of awards to enable tracking and monitoring of development results.<sup>136</sup> While more robust processes are in place at the award proposal and selection stages, setting the parameters to support development outcomes at the start without ongoing monitoring and active management fails to capitalise on the opportunity that data capture presents in supporting learning and improvement.

Across the core development issues that we have investigated, there is a need to develop more systematic monitoring frameworks that require award holders to document both their processes for embedding development focus and the results of these processes, including how they have informed research design and implementation. This will help to better assess and promote improved performance in achieving development outcomes, moving beyond 'compliance at entry' towards a culture of development excellence through the implementation of the award.

**The difficulties in obtaining the necessary overview to support proactive portfolio management have compounded patterns of unequal distribution of funding between countries and institutions, which stem from the origins of the fund but have not been substantially rebalanced since.**

When GCRF was established, the operating model relied heavily on the DPs to make decisions about which research to fund, as discussed in the previous section. As a result, the initial GCRF portfolio emerged largely out of the pre-existing work, networks and strengths of DPs and the UK research community. This was also exacerbated by a strong initial push from BEIS to 'get money out the door' quickly to meet spending targets at the time, rather than investing time to scope and design research to address specific challenges.<sup>137</sup>

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<sup>136</sup> GESIP Audit and Relevance and Coherence Technical Reports, 2021.

<sup>137</sup> Relevance and Coherence Technical Report, 2021.

As the preceding section discussed, within the fund there is a delegation of design and compliance with development criteria to award holders, set at the proposal and award selection stages. Within this context, and bound by the timeframes of the application process, awards holders often rely on pre-existing partnerships in focal countries or regions. The relevance and fairness modules both find that many awards within their samples often developed partnerships from existing relationships. These partnerships frequently defined the geographic scope of the work and also the additional partners to be involved.

As section 3 describes, the portfolio-wide mapping shows how this has evolved into an unequal distribution of funding across countries and partnerships. It shows that a small number of countries and institutions account for a significant share of the total number of GCRF partnerships,<sup>138</sup> and a large number of countries and institutions have a low level of GCRF engagement.

This reveals a tension between reliance on pre-existing relationships and GCRF's ambition to improve the diversity and inclusion of a wider range of researchers, institutions and LMIC countries across the fund to build capacities to deliver development impact. Indeed, while existing relationships have several benefits, including established trust and effectiveness,<sup>139</sup> development priorities – including on relevance and fairness – are then defined by a specific set of stakeholders, thereby embedding conditions that prevail throughout the whole pathway to impact.<sup>140</sup> The relevance module finds that partnerships are often relied on to ensure coherence and engage their networks and other relevant stakeholders in the research.

As the preceding sections discussed, specific programmatic efforts within the fund to diversify and build capacities across institutions and early career researchers have worked well, with high satisfaction expressed in the partnership by both Northern and Southern partners, and these represent a step forward in Southern partner engagement. Yet they also show limited geographical spread, with ARUA concentrated in Anglophone countries and FLAIR following a similar pattern, engaging in a limited number of countries and in well-established institutions.

**Overall, the absence of a portfolio-wide view obscures distributional imbalance in terms of geographies and partner institutions, leading to missed opportunities to address this, promote coherence or build connections to share learning and amplify development impacts, and risks further entrenchment of inequalities in the system.**

At portfolio level, topic modelling shows distinct clusters of awards covering similar topics within the same country or region, but limited evidence that awards holders across different programmes and DPs are encouraged to connect with each other.<sup>141</sup> This represents a missed opportunity to bring cohorts together within geographic topic clusters. This also points towards a larger challenge within the fund: that, without systematic and consistent tracking and monitoring data across all DPs, there is no portfolio-wide 'view' of the whole, and opportunities

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<sup>138</sup> For more information about the factors influencing this process, see Fairness Assessment Technical Report, 2021.

<sup>139</sup> Explored in more detail in Fairness Module Technical Report, 2021.

<sup>140</sup> Fairness Assessment Technical Report, 2021.

<sup>141</sup> Relevance and Coherence Technical Report, 2021.

are potentially missed to enhance coherence and build connections to support cohorts in sharing knowledge of the context and lessons learned for achieving development impact to amplify results.

In terms of research fairness, distributional imbalance raises additional wider implications from the de facto privileging of a limited number of well-established institutions in the Global South. This creates a tension between rewarding research excellence and building capacities, both of which are central objectives of the GCRF (see section 5.1.1 for a more in-depth discussion of this issue), and raises risks of distorting existing research ecosystems in LMICs over the medium to long term. The fairness assessment found that, even if partnerships are meeting standards of fairness, the scale of GCRF raises issues of ‘fairness’ at a contextual or systems level in terms of who sets the priorities for research, whose knowledge is empowered and whose capacities are built, who has a voice in international networks and collaborations, and the systems, processes and values that determine inclusion (as we will discuss in the next section).<sup>142</sup> Without the effective means to manage the portfolio to address imbalances, GCRF poses wider risks of doing harm within LMIC contexts by entrenching and enhancing inequalities in research ecosystems.

### 5.1.3 Challenge fund identity has not fully developed in GCRF, constraining its potential

**In its strategy and theory of change, GCRF was positioned to be a challenge-led fund but has not been implemented in this way.**

One of the key issues underlying a number of the difficulties and limitations we have identified in relation to GCRF is that it has not been implemented in line with its intended vision. GCRF was positioned to be a challenge-led fund, with a strategic vision ‘to ensure UK science takes the lead in addressing the problems faced by developing countries, whilst developing our ability to deliver cutting-edge research’.<sup>143</sup> However, the fund lacks some of the structural characteristics that might be expected of challenge-led R&I. From the literature, challenge-led R&I is typically defined as interventions carried out, often across disciplines, on a large scale with a clear, defined mission to be achieved.<sup>144</sup>

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<sup>142</sup> Fairness Assessment Technical Report, 2021.

<sup>143</sup> HMG, 2016. The allocation of science and research funding 2016/17 to 2019/20. Available at : [www.gov.uk/government/publications/science-and-research-funding-allocation-2016-to-2020](http://www.gov.uk/government/publications/science-and-research-funding-allocation-2016-to-2020)

<sup>144</sup> Fisher, R., Chicot, J., Domini, A., Misojic, M., Joanneum Research, Polt, W., Tuerk, A., Unger, M., Kuitinen, H., Arrilucea, E., Skov, F., Vva, K., Lykogianni, E., Taranic, I., Terziev, N., Vincze, M., Leijten, J., Loikkanen, T., Matt, M. and Vonortas, N., 2018. Mission-Oriented Research and Innovation: Assessing the impact of a mission-oriented research and innovation approach; Casadevall, A. and Fang, F. C., 2016. Moonshot Science—Risks and Benefits. *mBio* 7(4); Lalli, M., Ruysen, H., Blencowe, H., Yee, K., Clune, K., DeSilva, M., Leffler, M., Hillman, E., El-Noush, H., Mulligan, J., Murray, J.C., Silver, K. and Lawn, J.E., 2018. Saving Lives at Birth; Development of a Retrospective Theory of Change, Impact Framework and Prioritised Metrics. *Global Health* 14(1); Geels, O., 2019. Lessons for the Formulation and Execution of Mission-Oriented Innovation Policy. A Comparative Case Study of Regional Energy Strategies in the Netherlands.



More specifically, challenge-led or mission-oriented R&I programmes should possess a number of key characteristics, including (but not limited to):

- a clear direction<sup>145</sup>
- ambitious but realistic R&I actions<sup>146</sup>
- cross-disciplinary and cross-sectoral innovation<sup>147</sup>
- engage multiple key stakeholders, including likely adopters, from the outset, including in setting the agenda and strategy<sup>148</sup>
- allow multiple bottom-up solutions (mission-oriented R&I must enable bottom-up experimentation and learning so that the innovation process itself is nurtured through dynamic feedback loops and serendipity)<sup>149</sup>

Some of these characteristics are observed in the GCRF in clusters of DPs, programmes and awards, but the fund as a whole lacks many of these underpinning elements in its implementation and design. Firstly, although GCRF has 'Challenge Areas', these do not provide a clear direction or clear goals that are ambitious but realistic that the fund is aiming to achieve. For example, evidence from our analysis of relevance shows that the challenge areas do not provide a clear organising principle and awards are not clustered around them:

'It is difficult to draw overarching conclusions about the relevance of GCRF to addressing specific SDGs or Challenge Areas. While SDGs are widely used and understood across the portfolio, they are very high-level and awards are often linked to multiple SDGs (reflecting the interdisciplinary nature of the fund and the interconnectivity of the SDGs). Challenge Areas, which were meant to bring a tighter focus on real development issues for awards to address, are not sufficiently specific and have not been sufficiently scoped in terms of the development challenges and issues involved. This has made them somewhat generic. Our topic modelling suggests that the classification of awards may have been fairly arbitrary in some cases. This makes it difficult to make meaningful judgements on the overall thematic shape of the GCRF portfolio and thus relevance to addressing specific SDGs or Challenge Areas'.<sup>150</sup>

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<sup>145</sup> Mazzucato, M., 2018. Mission-Oriented Research & Innovation in the European Union: A Problem-Solving Approach to Fuel Innovation-Led Growth. Luxembourg, European Commission: 1–36.

<sup>146</sup> Rodrik, D., 2004. Industrial Policy for the Twenty-First Century. John F. Kennedy School of Government Working Paper Series, John F. Kennedy School of Government.

<sup>147</sup> Rodrik, D., 2004. Industrial Policy for the Twenty-First Century. John F. Kennedy School of Government Working Paper Series, John F. Kennedy School of Government; Mazzucato, M., 2018. Mission-Oriented Research & Innovation in the European Union: A Problem-Solving Approach to Fuel Innovation-Led Growth. Luxembourg, European Commission: 1–36.

<sup>148</sup> Van Drooge, L. and Spaapen, J., 2017. Evaluation and Monitoring of Transdisciplinary Collaborations. *The Journal of Technology Transfer*: 1-15; Joly, P.-B., & M. Matt, 2017. Towards a New Generation of Research Impact Assessment Approaches. *The Journal of Technology Transfer*: 1–11.

<sup>149</sup> Rodrik, D., 2004. Industrial Policy for the Twenty-First Century. John F. Kennedy School of Government Working Paper Series, John F. Kennedy School of Government; Mazzucato, M., 2018. Mission-Oriented Research & Innovation in the European Union: A Problem-Solving Approach to Fuel Innovation-Led Growth. Luxembourg, European Commission: 1–36; Amanatidou, E., Cunningham, P., Gök, A., and and Garefi, I., 2014. Using Evaluation Research as a Means for Policy Analysis in a 'New' Mission-Oriented Policy Context. *Minerva* 52(4): 419-438.

<sup>150</sup> Relevance and Coherence Technical Report, 2021.



Secondly, the fund does aim to ensure cross-disciplinary and cross-sectoral working, and we have evidence that GCRF awards are more multidisciplinary compared to the overall UKRI portfolio (see section 3). However, the extent to which key stakeholders are engaged from the outset, and particularly in strategy development, is limited, notably in terms of Southern perspectives.

‘Opportunities for Southern voices to shape GCRF strategy, set the agenda and make decisions remain very limited’.<sup>151</sup>

Finally, as set out above, GCRF does enable opportunities for innovation and bottom-up solutions to emerge – and we see multiple examples of these innovative practices emerging, from the development of a gender equality toolkit by the University of Edinburgh<sup>152</sup> to the incorporation of a mandatory ‘discovery phase’ into UKSA’s funding processes, involving context or landscape analysis, to ensure relevance.<sup>153</sup> However, what is lacking, as discussed in the preceding section (5.1.2), are the structured feedback loops necessary to enable those innovations to propagate and for the fund to learn from success as specified in the ToC.

‘As it currently stands, award holders are mostly sharing approaches to improve the GESIP responsiveness of their awards based on ad hoc personal networks and engagements. There are therefore wider managerial concerns for the GCRF to consider with respect to its role in facilitating and resourcing knowledge sharing and capturing more innovative experiences observed among DPs and award holders’.<sup>154</sup>

This means that it is hard to assess the extent to which the ToC assumption that there is ‘sufficient appetite and capacity in the UK to work in a challenge-oriented way’, since to a large extent this opportunity has not been provided within the fund.

**Nevertheless, significant efforts have been made to improve the challenge orientation of the fund, and these show the transformative potential of GCRF, when the strengths of diverse approaches can be harnessed.** Key efforts have been made to improve the challenge orientation of GCRF and introduce aspects of the fund that are more directed to specific development challenges. These offer some insight into the enhanced potential the fund could have if a greater number of awards were delivered in this way across the portfolio. For example, the Interdisciplinary Hubs are ‘expected to demonstrate that their priorities and areas of focus were co-designed with partners across academia, government, international agencies, NGOs and community groups in developing countries’, and our assessments have found this to be borne out (see Spotlight in Section 4.1.4).<sup>155</sup>

The Challenge Leaders were also introduced with the aim of providing a stronger challenge orientation and coherence to the fund, and they have taken some promising actions which aim to steer the fund in a more challenge-led direction by drawing on existing networks and

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<sup>151</sup> Fairness Assessment Technical Report, 2021.

<sup>152</sup> GESIP Audit Technical Report, 2021.

<sup>153</sup> Relevance and Coherence Technical Report, 2021.

<sup>154</sup> GESIP Audit Technical Report, 2021.

<sup>155</sup> Relevance and Coherence and Fairness Assessment Technical Reports, 2021.

knowledge of other initiatives, building dialogue between Research Councils, and helping to identify thematic overlaps, intersections and gaps within and beyond GCRF.<sup>156</sup>

However, the effectiveness of the Challenge Leaders in doing this at cross-portfolio level has been limited by the existing internal structures of the fund (e.g. the fact that they sit within UKRI has limited their impact on the academy-funded aspects of the portfolio) and the need to superimpose a challenge structure on an already-existing portfolio of research which was initially designed in a more researcher-led way. Despite this, there have been some promising avenues of work pursued by the Challenge Leaders, notably the Collective Programme, which set out calls that were designed to enhance the impact of the six challenge portfolios and that were developed based on a portfolio analysis of existing funded projects to identify gaps and opportunities, led by the Challenge Leaders in collaboration with wider stakeholders (see Box 9).<sup>157</sup> The Challenge Leaders will be examined in more detail in the next stage of the evaluation (stage 1b).

These more challenge-oriented aspects of the programme provide indications of the potential for GCRF to deliver transformative, inclusive and development-led research that drives the field forward (see Spotlight in Section 4.1.4). At present these large-scale and cross-cutting investments account for about half of the portfolio, so these are important strengths. However, a significant proportion of the portfolio is less challenge oriented and likely to be more scattered as a body of work. The lack of structure and focus at cross-cutting level, with key decisions around issues such as contextual fairness, consideration of poverty and social inclusion, and relevance devolved often not just to the programme but to award holders, means that some parts of the fund often look more like a set of researcher-led projects on development topics than a mission-driven, challenge-led fund.

**The fact that GCRF has not achieved a full focus on challenges as a challenge-led R&I fund, as was initially intended, contributes to a range of the key issues already discussed.**

The lack of more specifically framed challenges, with well-defined aims, under which research is structured across DPs contributes to the challenges in balancing priorities between research excellence and development impact, proactive portfolio management and the lack of internal coherence of the portfolio.<sup>158</sup> It also makes MEL more challenging, since there are not clear lines of accountability for key fundamentals, such as gender and inclusion, or internal structures along which MEL activities can be conducted and through which learning can be propagated.<sup>159</sup> The lack of clear challenge-specific aims against which progress on particular challenges can be assessed also makes balancing the portfolio between countries and target institutions, and MEL, more difficult. Another key characteristic for challenge-led R&I is the need for governance which is conducted in a centralised manner, combining technical

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<sup>156</sup> Relevance and Coherence Technical Report, 2021.

<sup>157</sup> Ibid.

<sup>158</sup> Relevance and Coherence Technical Report, 2021.

<sup>159</sup> GESIP Audit Technical Report and Management Review Report, 2021.

expertise, financial resources and decision making autonomy in one agency.<sup>160</sup> This links to an observed lack of ownership for the GCRF as a whole, which is observed as a key underlying challenge in the Management Review report.<sup>161</sup>

An element that contributes to the lack of ownership is that GCRF has not catalysed a strong collective sense of identity and unity as a fund working together to achieve common goals. Individual DPs and programmes operate separately and do not have a sense of being part of a wider 'whole'. This is evidenced in the way that policies and practices emerge bottom-up and diverge but are not shared fund-wide, and is evidenced also in the silos we see between different parts of the portfolio. It is also reflected in the difficulty of establishing the full scope and content of the R&I activities funded through GCRF. As noted above, diversity and emergence can be beneficial in challenge-led programmes, but only where they feed in to learning and growth, channelled through structures that promote coherence. We have seen initiatives put into place reflecting this need for better connection across the fund, such as working groups across DPs, but perspectives on the benefits of these are mixed and participation is limited to specific groups of actors.

More broadly, this lack of central mission orientation and drive feeds through into limitations in the extent to which the fund is truly focused on development needs and achieving impact in a development context. We see this in a range of ways across the implementation of the fund. For example, we noted administrative and financial challenges for Southern partners in participating in GCRF,<sup>162</sup> a compliance rather than excellence orientation in the approach to gender and EDI,<sup>163</sup> a lack of clear language around issues such as poverty and social inclusion,<sup>164</sup> and a low level of consideration of coherence (both internally and relative to other actors) in the portfolio.<sup>165</sup> This unevenness around the fundamentals of managing for development impact in the delivery of the fund is closely linked to the lack of a central drive and orientation, since the decisions are devolved to lower levels within GCRF, where expertise on all these issues may not be expected (without support and capacity development, already highlighted as a weakness)<sup>166</sup> and where there is an absence of fund-level standards and expectations.<sup>167</sup>

**Uneven levels of development competence also create significant risks in the delivery of the fund.** As an unprecedented investment in R4D, GCRF has the potential to be transformative as its ambition. It certainly has brought new UK researchers and innovators into contact with development related R&I, as set out in its strategy. This 'unique opportunity to build a global community of researchers committed to sustainable development and the

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<sup>160</sup> Mendonça, H. L., van Aduard de Macedo-Soares, T. D. L. and Fonseca, M. V. de A., 2018. Working Towards a Framework Based on Mission-Oriented Practices for Assessing Renewable Energy Innovation Policies. *Journal of Cleaner Production* 193: 709-719.

<sup>161</sup> Management Technical Report, 2021.

<sup>162</sup> Fairness Assessment Technical Report, 2021.

<sup>163</sup> GESIP Audit Technical Report, 2021.

<sup>164</sup> Ibid.

<sup>165</sup> Relevance and Coherence Technical Report, 2021.

<sup>166</sup> Management Review, GESIP Audit, Fairness Assessment Technical Reports, 2021.

<sup>167</sup> GESIP Audit, Management Review, Fairness Assessment Technical Reports, 2021.

eradication of poverty’ certainly offers transformative potential, but it also carries risk. As many of these new researchers and innovators lack development experience and specialist competencies – understanding of the needs and considerations required in development research around issues such as fairness, poverty and social inclusion and relevance – there is the risk of ‘doing harm’.

On direct concerns of safeguarding, clear and significant progress has been made, through BEIS and UKRI’s work (as part of the UK Collaborative on Development Research [UKCDR] Safeguarding Funders’ Group) on the development of the UKCDR Guidance on Safeguarding in International Development Research (2020),<sup>168</sup> which shows how central guidance and standards, and a fund-level policy and identity around these issues, can drive improvement. However, this needs to be expanded to capture a wider imperative to ‘do no harm’, covering not just the direct concerns such as safeguarding but also the wider potential to ‘do harm’ indirectly, e.g. where local priorities are displaced by externally imposed agendas, or where local power dynamics are reinforced.<sup>169</sup>

Broader concerns arising from uneven levels of development experience include, at one end of the scale, risks of wasted resources, where results are not capitalised on to deliver impact due to a lack of portfolio-level insight or translational capabilities. This wasted investment could also result from work that is not fully relevant and development needs-oriented, or where existing work is duplicated in certain issue areas and geographies due to a lack of wider considerations of coherence. For example, our relevance assessment found a good-sized cluster of food security-related awards in Ethiopia, with no mutual awareness or linkages between them.<sup>170</sup> Worse, lack of development competencies could lead to investment actively doing harm due to a lack of awareness of power relations, context and implications of the influence of the fund on research ecosystems and wider communities in the Global South. As our fairness assessment noted:

‘R4D research teams often engage with local communities in the Global South in different ways. This engagement can potentially be transformative, but also amplifies the issues outlined above, given the inherent power differential between the parts. The moral, ethical, social implications arising from such engagement are substantial [...] Researchers often fail to recognise the diversity and power dynamics within communities. Communities are not monoliths, and issues of inclusion and exclusion should be given careful consideration. There are risks of elite capture of the research process’.<sup>171</sup>

As noted by the fairness assessment, if these dynamics are left unmanaged at a fund level, ‘there is a risk that, despite best intentions, the GCRF might [...] reproduce inequalities rather than solve them, whilst at the same time dehumanising communities and promoting an

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<sup>168</sup> UKCDR, 2020. Available at: <https://www.ukcdr.org.uk/resource/guidance-on-safeguarding-in-international-development-research/>

<sup>169</sup> Fairness Assessment, GESIP Audit Technical Reports, 2021.

<sup>170</sup> Relevance and Coherence Technical Report, 2021.

<sup>171</sup> Fairness Assessment Technical Report, 2021.

academic “white saviour” culture in which money, leadership and “answers” flows from one nation outwards to other nations in need of being saved, fixed, helped or developed’.<sup>172</sup>

**A truly challenge-led approach would mitigate many of these risks and could help GCRF to deliver on its transformative potential.**

Taking a truly challenge-led approach, in which the research agenda and strategy is shaped by a range of key stakeholders, with a set of co-created development missions against which a carefully selected and complementary, cohesive programme of awards has been made, could mitigate these risks and enable GCRF to deliver on its transformative potential. There is much to be learned from existing work within GCRF that moves closer to a challenge-led approach – the Interdisciplinary Hubs, the GROW Programme, IPP, the Collective Fund, the FLAIR programme (see spotlight in Section 4.1.4). If the promising standards of practice seen in the signature investments and other portfolios could be more systematically shared across the fund, and a more coordinated and proactive approach to portfolio management adopted, these risks could be mitigated.<sup>173</sup> Adopting a truly challenge-led approach, which would involve interdisciplinary and cross-fund working, would also help create incentives for learning and problem solving around shared challenge objectives.

There are also a number of examples in the UK and elsewhere that GCRF could draw upon and adapt to a development context. For example, UKRI’s Industrial Strategy Challenge Fund offers an example of a mission-led R&I fund that has been implemented effectively in the UK R&I landscape, within the Haldane parameters (see Box 9). Looking further afield, we see Horizon Europe launching mission-oriented investment as part of the EU framework programmes.<sup>174</sup> Both of these offer opportunities to learn more about possible models for challenge-led or mission-oriented R&I funding to underpin the coming phases of GCRF.

**Overall, the Stage 1 assessments highlight that while there are strong clusters of challenge-led R&I with structures for portfolio management and learning in parts of the portfolio, GCRF as a whole has not implemented the structures and systems needed for a truly challenge-led approach and has fallen somewhat short of catalysing a fund-wide identity to underpin mission-driven R&I for development impact.**

Learning from GCRF’s diversity, experience and innovation has strong potential to contribute to new capacities, as experience in some parts of the portfolio shows, with expertise starting to be built in the UK and LMICs. However, the formal and informal, horizontal and vertical channels for sharing expertise for more consistent practices are not in place outside of the programmes where a cohort identify has been catalysed, i.e. the Hubs and others.

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<sup>172</sup>Research Community Guide to the GCRF – AHRC workshop report.

<sup>173</sup> Relevance and Coherence, Fairness Assessment and GESIP Audit Technical Reports, 2021.

<sup>174</sup> European Commission, Missions in Horizon Europe. Available at : [https://ec.europa.eu/info/horizon-europe/missions-horizon-europe\\_en](https://ec.europa.eu/info/horizon-europe/missions-horizon-europe_en)

### **Box 9. Industrial Strategy Challenge Fund (ISCF) – an example of a challenge-led R&I fund**

Established in 2016, and delivered by UKRI since 2018, the ISCF aims to support the development of solutions to major industrial and societal challenges facing the UK through the delivery of a mission-oriented R&I funding programme with a total commitment of £2.6 billion in government funding, combined with an additional £3 billion in matched private sector funding. Under the ISCF's mission-oriented approach, funding has been distributed through the creation of individual 'challenges' – formed to identify key societal and industrial challenges facing the UK. The way the fund is implemented has evolved over its lifetime, based on learning from prior experiences. Most recently, businesses and academia were invited to nominate important 'challenges' that the fund can address through an open call, and these were then prioritised by UKRI in collaboration with key stakeholders across sectors. Following the establishment of each challenge, public and private organisations have been invited to bid collaboratively for projects that have the potential to contribute to addressing the challenge. Thus far, 24 ISCF challenges have been established, with 1,613 projects supported.<sup>175</sup> Individual ISCF challenges have been delivered through an eclectic mix of funding mechanisms and instruments, with the specific mechanisms used depending on the requirements of the challenge. Ways in which ISCF funds have been allocated include: funding for demonstrator projects; funding for the development of R&I infrastructure; funding for early-stage collaborative R&D; and funding for discovery-driven research. A key feature of the ISCF's mission-oriented approach is the 'Challenge Director' approach. A lead expert within the specific challenge area, the Challenge Director's role is to ensure coordination across the various organisations and initiatives participating in the challenge and to ensure successful delivery against challenge objectives.

There are gains to be made in terms of creating new kinds of development expertise and stakeholder relationships in the UK and the Global South to achieve 'ODA research excellence' to accompany R&I excellence, an ambition that was clearly stated in the GCRF vision and strategy. The experience of the Interdisciplinary Hubs, GROW and IPP and other signature investments offers some insights into how these priorities can be balanced

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<sup>175</sup> Davies, G., 2021. UK Research and Innovation's management of the Industrial Strategy Challenge Fund. London, National Audit Office: 61.



## 6. Recommendations

*This section offers three main recommendations for addressing the constraints identified and a set of actions to support improvement.*

### 6.1 Recommendations

These recommendations are focused on the three constraints that our synthesis analysis identified as holding back GCRF's transformative potential as a fund that delivers R&I excellence with development impact.

GCRF completed its first phase of five years in 2020–21 and was due to start a new five-year phase in March 2021. As noted, the funding environment has radically changed, which has disrupted the end of the current phase and created uncertainty about future phases of the fund.

As the evaluation is designed to follow GCRF with a slight time lag, and given the restricted funding context for GCRF in 2021, the recommendations are framed around strategic structures and actions that are a priority for in the short term, with the remaining actions to consider in the design of a future fund.

There are three main recommendations, with a series of actions for implementing them. The actions were identified through both the synthesis and the modules. The recommendations are assigned owners based on the evaluation team's understanding of the BEIS and DP management structures, and were informed by in depth discussions with the GCRF stakeholders of the draft recommendations before finalising.

**Recommendation 1: Establish a consistent Challenge Fund identity, with the cultures, shared ownership and structures that support this.**

**Owner:** Led by BEIS, with DPs

GCRF is more than a research fund; it is about combining research excellence and development impact, as the challenge-oriented parts of the portfolio demonstrate. Although needing to operate within the Haldane parameters, adopting an explicit Challenge Fund approach is possible within the GCRF devolved system. Key structures and systems are needed to deliver a fund that has a sense of identity and ownership, which is structurally aligned around clear development-led missions, and which has development competence and the principles of 'do no harm' at its heart. The signature investments offer useful models for cascading management structures and approaches that could be applied across the whole GCRF portfolio, as do other funds such as the ISCF (managed by UKRI).



## Recommendation 1 Actions:

### **1. PRIORITY: Establish an adaptive management process that brings BEIS fund management and DP GCRF managers together annually to coordinate and review progress against agreed GCRF strategic priorities.**

Clarify the roles of BEIS and DPs in an adaptive management process – setting out what the shared ownership and accountabilities look like for delivering ODA research excellence.

Establish an annual strategic workplan of a few high-level priorities to address collectively, e.g.:

- accelerating gender mainstreaming in a consistent way across the fund, cascading from the BEIS gender policy and DP-specific gender strategies, and ensuring that the systems are developed to monitor, review and improve practice on a regular basis.
- reviewing equitable partnership practices across the fund after five years to improve best practice and make these consistent in all DPs.

### **2. Expand or replicate the work of the Challenge Leaders and challenge portfolios beyond UKRI in other DPs, to build on the valuable role these structures have played in improving relevance and coherence<sup>176</sup>. If DPs are funding portfolios of smaller awards, adopt the same kinds of management mechanisms as the Hubs, considering what is appropriate for the level of funding – e.g. a challenge vision, challenge analysis, ToC for the call, portfolio perspective, investment of time for building partnerships and a cohort identity, and active management of the portfolio for coherence. [Relevance recommendation]**

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<sup>176</sup> There are indications that Challenge Leaders have supported efforts to improve relevance and coherence, yet they are only a small number of individuals, operating mainly within UKRI and the Research Councils, and they have diverse approaches to the role. The effectiveness of these processes will be examined in the next stage of the evaluation to understand how they work in more detail.

**3. Create structures and processes for involving more development experts and stakeholders from the Global South to strengthen challenge-oriented scoping, agenda-setting, design and delivery of projects across the fund.** These should include stakeholders from the Global South, but moving beyond academics to include the private sector, innovators, policy and decision makers and development practitioners, as accompanying experts to contribute throughout the programme cycle.

Increasing the level and the diversity of participation of stakeholders from the Global South at the strategic level should be prioritised to deepen and broaden the conversation on fairness issues to maximise impact for the GCRF investment as a whole. This should encompass all levels of the fund – from the Strategic Advisory Group (SAG) to DP level, where a minimum amount of representation could be mandated to ensure that Southern perspectives shape investment priorities. [Fairness recommendation]

**4. Build coherence more explicitly into application requirements and proposal processes and encourage,** to help ensure coherence is considered upfront in the same way that relevance is. This should include requirements for stakeholder engagement with LMIC stakeholders beyond direct partners and the academic community, providing guidance, time and resources for award holders to conduct needs assessments, expand on existing relationships to develop broad coalitions of partners, and undertake stakeholder mapping or landscape analysis to understand how their award fits into the wider ecosystem of research. This could build on existing good practice observed within the fund and detailed in this report. [Relevance recommendation]

**5. Build on existing workshop, symposia and networking opportunities to support coherence in a more systematic way,** including within geographical topic clusters. These events could more actively encourage and support award holders to identify synergies and pursue collaborations, including across diverse programmes and DPs. [Relevance recommendation]

**6. Consider how relevance and coherence over the lifetime of awards can be more systematically measured and reported.** For example, developing reporting mechanisms requiring award holders to document both the processes undertaken to support relevance and coherence (stakeholder consultation, co-creation, contextual analysis, etc.) and the results of these processes in terms of how they have informed research design and implementation. [Relevance recommendation]

**Recommendation 2: Establish quality standards for ‘ODA research excellence’ , to optimise the combination of research excellence and development impact.**

**Owner:** Led by BEIS, with DPs

As the synthesis identified, this unresolved tension leads at times to the privileging of research excellence and a lower compliance approach to the fundamentals of development impact. These should include explicit ‘do no harm’ principles. The efforts on equitable partnerships and safeguarding have shown how the GCRF community can come together around key priorities.

A process of agreeing ambitious quality standards for ‘ODA research excellence’ for the whole fund to work towards would help BEIS, DPs and award holders cultivate a culture of improvement to realise the ambition of creating transformative research on global challenges.<sup>177</sup> IDRC’s Research Quality Plus (RQ+) framework, which assesses the quality of research in development contexts (understanding quality as a multidimensional concept and incorporating contextual factors that affect the research in a development context) could provide the starting point for such an initiative.<sup>178</sup>

**Recommendation 2 Actions:**

**7. PRIORITY: Develop a set of principles, policies and quality standards for ‘ODA research excellence’, including ‘do no harm’ principles, and standards on relevance & coherence, fairness, gender, social inclusion and poverty.** Establish a set of quality standards for ODA research excellence across the fund, grounded in the GCRF vision. These would build on the model for equitable partnerships and safeguarding but would include a two-yearly annual review and improvement process.

Quality standards should encompass relevance and coherence, ‘fairness’ writ large, gender, SI/EDI and poverty alleviation, and equitable partnerships, with capacity building as a separate but linked dimension.

Standards should flow from/link to priority fund-wide strategies, notably BEIS’s Gender Equality, Disability and Inclusion (GEDI) strategy, as one implementation process.

Standards would need to be framed to encourage a culture of learning and improvement, e.g. monitoring and capture and sharing of good practices, and be supported by resources and training produced by the community – e.g. the Gender Equality Toolkit – with case studies to showcase best practice and inspire research teams to reach for ODA research excellence.

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<sup>177</sup> Collective processes to agree, implement and monitor quality standards have been shown to be important drivers of practice improvements in a number of fields – most notably in humanitarian response, where the Sphere standards process has demonstrably improved the quality to improve the quality and accountability of humanitarian assistance. <https://spherestandards.org/about/>

<sup>178</sup> IDRC, 2020. Research Quality Plus. Available at: <https://www.idrc.ca/en/research-in-action/research-quality-plus>

**8. PRIORITY: Integrate a clear poverty perspective into BEIS' Gender Equality, Disability and Inclusion (GEDI) strategy.**

By further clarifying GCRF's expectations and framing in relation to the interlinkages between poverty on the one hand and gender equality and SI/EDI on the other, a broader poverty impact narrative can be developed over time. This foundation provides an avenue for GCRF to assess both compliance and excellence. While a critical interface will be at the call and in the proposal stage, clarity is needed as to how these interlinkages apply at all stages of the funding management cycle.

**9. Capacity building should have its own standard, with established framework and objectives.** Developing a clearer framework for bi-directional capacity enhancement and plan for clearly delineating/prioritising this type of work (through criteria and scoring systems) would help to draw in a more diverse range of formal Southern partners. Importantly, this will help GCRF commissioners and applicants to more effectively negotiate possible trade-offs between research excellence, capacity enhancement and impact. [Fairness recommendation]

**Recommendation 3: Establish a collective monitoring and learning process, with appropriate structures and accountabilities, that promotes a Fund-wide portfolio overview to support adaptive management.** This should build on the GCRF ToC and the opportunities offered by RODA and the KPI process, but going beyond data and management information to encompass a learning strategy that is resourced for knowledge management, i.e. capturing and sharing learning across BEIS and the DPs to learn from innovations and drive ODA research excellence across the fund.

**Owner:** Led by BEIS, with DPs

With the RODA system coming on board, GCRF is now in a good place to build up a shared portfolio overview and promote a sense of shared ownership with DPs. Improved information gathering across the fund will support the tracking of the quality standards and enhance a portfolio-wide view; however, data flows should be accompanied by a broader learning strategy that is able to identify and capture innovations and promising practice in different areas of the portfolio, and share learning across BEIS, DPs and award holders.

### **Recommendation 3 Actions:**

**10. PRIORITY: Develop a shared annual review process to support the recommended adaptive management process.** This should build on the annual review process being developed by the evaluation to include the collective participation of BEIS and DP stakeholders in reviewing annual progress on GCRF aims and objectives. With improving management information through KPIs, RODA and evaluation data, there is an opportunity to establish the ways of working and cultures in the short term between BEIS and DPs that will support an adaptive management approach.

**11. Standardise the MEL infrastructure and communication of GESIP expectations (and associated resource support) across the GCRF and its funding cycles.** It is recommended that the GCRF embed a GESIP focus in the redesign of the RODA system. Poverty alleviation results should be captured by DPs and captured in RODA. . BEIS could also work with DPs to increase the accuracy, visibility and – where possible – the complexity of disability and LGBTQIA+ data categories in the BEIS tracker and ResearchFish platform. [GESIP recommendation]

**12. Open up learning spaces for GESIP that are facilitative and reflexive as part of an increased emphasis on GESIP-oriented knowledge management for ‘research with development excellence’.** Building on observed and growing communities of practice and horizontal learning mechanisms, BEIS, DPs and award holders can identify entry points and actions for developing a GESIP focus within GCRF’s knowledge management system. This recommendation supports recommendation 2 of the Tetra Tech (2020) Approaches to Gender Equality Review’– ‘BEIS should institute a systematic approach to learning, clearly differentiating between internal and external functions at key stages in the fund management cycle’. A more GESIP-focused knowledge management system will serve to better coordinate actions for capturing and disseminating GESIP-specific lessons to support improvement. [GESIP recommendation]

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# Annexes

## Annex 1: Synthesis evidence base

Table 2 summarises the evidence base developed through the three modules.

**Table 2: Summary of the evidence base from all three modules**

Evidence type	Relevance	Fairness	GESIP
Quantitative data science analysis	1,050 UKRI awards reviewed for all modules, with specific analyses of patterns and clusters using search criteria and keywords tailored for each module		
Documents	<p>250 documents, including:</p> <p>Contextual analysis: documents for two regions and five countries, inc. regional plans, UN country plans, major national policies and initiatives</p> <p>Strategic documents (BEIS, UKRI, other DPs): 100</p> <p>Programme and funding calls: 55 documentation for five programmes</p> <p>Awards: 26 awards, 98 documents</p>	<p>200 documents, including:</p> <p>Strategic documents (BEIS, UKRI, other DPs): 39</p> <p>Programme and funding calls: documentation for 69 funding calls</p> <p>Regional partnerships documents: ARUA/UKRI and AAS/RS</p> <p>Awards: documents from 48 awards reviewed</p>	<p>313 documents, including:</p> <p>Strategic documents (BEIS, UKRI, other DPS): 39</p> <p>Programme and funding calls: 274 documents from 16 DPs</p> <p>Awards: 201 documents from 54 awards reviewed</p>
Interviews	<p>88 interviews</p> <p>BEIS, UKRI and DPs: 13</p> <p>DPs: 20</p> <p>Award holders: 47 PIs, Co-Is and partners (52% women<sup>179</sup>)</p>	<p>138 interviews</p> <p>BEIS and DPs: 18</p> <p>Programme partners: 4</p> <p>Award holders: 115 PIs and Co-Is (44% women)</p>	<p>113 individuals engaged through interviews and FGDs (49% women)</p>

<sup>179</sup> Based on available demographic data

Evidence type	Relevance	Fairness	GESIP
Co-creation workshops	N/A	N/A	11 participants, invited from awards, panels, Challenge Leaders (five women, six men)

Source: GCRF Stage 1a Module Reports, 2021 (see annexed technical reports)

## Annex 2: Technical reports

See separate files for the three reports on relevance, fairness and gender, inclusion and poverty.

## Annex 3: Evidence mapping

**Table 3: Evidence mapping of synthesis sub-themes to technical reports**

Conclusions and sub-themes	Relevance and coherence	Fairness	GESIP	Management review
5.2.1 Tension between managing for research excellence and development impact				
<p>A key underlying constraint is the implicit tension in GCRF between research excellence and managing for development impact, which needs to be made explicit to find the right balance, supported by the right structures, capacities and improvement processes across the fund, or else opportunities to create new kinds of capacity – which was the ambition in the GCRF vision – may be missed.</p>	Yes	Yes		Yes
<p><b>The Haldane principle, that informs how GCRF commissions R&amp;I, means that the responsibility for managing for development impact is shaped by DPs at the programme level through guidance, but delegated to award holders to implement, so the fundamentals of relevance, coherence, fairness, gender, inclusion and poverty are not consistently driven from a strategic level, leading to variability in approaches and uneven delivery.</b></p>	Yes	Yes	Yes	Yes
<p>The devolution to DPs and award holders has led to a diversity of approaches, many of which are clearly strong practices, with a common focus on bringing strategic development expertise into the call and commissioning process to scrutinise and embed core requirements. However, outside of the signature investments, this focus is not sustained throughout awards, nor are good practices shared more widely across the fund.</p>	Yes	Yes	Yes	Yes
<p>Equitable partnerships have been the main strategy to deliver both on capacity building and development impact; although this is a strong foundation, capacity building results have been inconsistent because it is approached in an ad</p>		Yes		

Conclusions and sub-themes	Relevance and coherence	Fairness	GESIP	Management review
hoc way; the tension between research excellence and capacity building remains implicit.				
The devolved model means that the implementation of equitable partnerships cascades to award holders and their institutions, which has led to uneven approaches and some negative impacts on partners in the Global South through administrative arrangements that do not take account of the constrained resource base of LMIC institutions.		Yes	Yes	
Overall, while there are clusters of good and effective practice in partnership working and capacity building, the tensions between research excellence and managing for development impact are constraining GCRF's potential.		Yes		Yes
<b>5.2.2 Lack of portfolio-wide view constrains innovation and managing for development impact</b>				
Fund-wide efforts to support coherence within portfolios are improved, but gaps remain in bringing cohorts together to connect, particularly outside of large programmes, to showcase innovation, share learning to build capacity in delivering development outcomes, and mainstream good practices.	Yes	Yes		
All three modules find that while good and innovative practice in research delivering on development challenges is evident within the portfolio, sharing and learning from these examples is limited, occurring mainly within individual projects, shared via immediate networks, or evident within the large programmes.	Yes	Yes	Yes	
Mechanisms for monitoring and reporting are insufficiently tailored to capture the dimensions of development issues, leading to ad hoc monitoring systems and inconsistent data across the fund.			Yes	Yes
Existing systems support compliance around central issues within the fund, but are insufficiently dynamic or consistent to	Yes	Yes	Yes	Yes



Conclusions and sub-themes	Relevance and coherence	Fairness	GESIP	Management review
promote bi-directional or horizontal learning and enhance development excellence.				
More complex disaggregation of ODA issues is required to unpack dimensions of development concepts such as poverty, fairness, relevance and social inclusion, to provide meaningful categories to support improved data capture and analysis.		Yes	Yes	
Beyond the need for improved framing, nuance and better capture of development issues within monitoring data, there is a lack of ongoing reporting to ensure continued compliance and support accountability, as well as to provide feedback to promote bi-directional learning.	Yes		Yes	Yes
The difficulties in obtaining the necessary overview to support proactive portfolio management have compounded patterns of unequal distribution of funding between countries and institutions, which stem from the origins of the fund but have not been substantially rebalanced since.	Yes	Yes		Yes
Overall, the absence of a portfolio-wide view obscures distributional imbalance – leading to missed opportunities to address this, promote coherence or build connections to share learning and amplify development impacts – and risks further entrenchment of inequalities in the system.	Yes	Yes		
<b>5.2.3 Challenge fund identity has not developed fully in GCRF, constraining its potential</b>				
GCRF was positioned to be a challenge-led fund but has not been implemented in this way.	Yes	Yes	Yes	
The fact that GCRF has not been implemented as a challenges-led R&I fund as was initially intended contributes to a range of the key issues already discussed.	Yes	Yes	Yes	Yes
Nevertheless, significant efforts have been made to improve the challenge orientation of the fund, and these show the transformative potential of GCRF.	Yes	Yes		

Conclusions and sub-themes	Relevance and coherence	Fairness	GESIP	Management review
Uneven levels of development competence also create significant risks in the delivery of the fund.	Yes	Yes	Yes	
A truly challenge-led approach would mitigate many of these risks and could help GCRF to deliver on its transformative potential.	Yes		Yes	

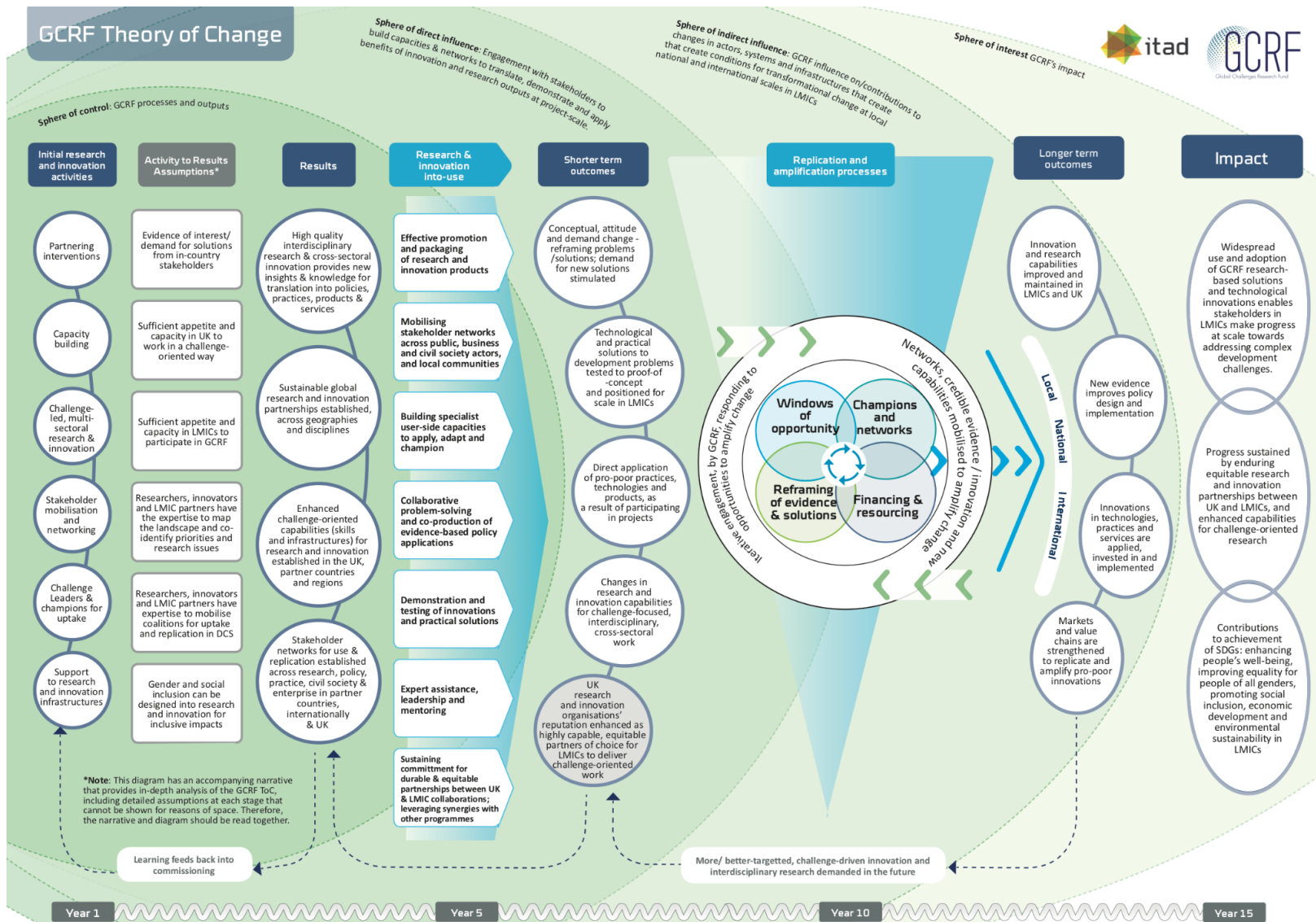
### Coding framework – thematic analysis

**Table 4: Coding framework used during iterative coding stage in the framework synthesis process**

1. Research excellence vs development impact
1.1 High-level framing of development impact
1.2 investment in development capacities
1.3 Capacity building between UK and LMICS
1.4 Capacity building of development expertise among research community
1.5 Delegation to award holders to manage for development impact
1.6 Impacts of administrative processes for partners
2. Heterogenous system of DPs
2.1 Diversity of approaches across DPs
2.2 Implications of DP structures and award process for inclusion of institutions
2.3 Harnessing a diversity of approaches
3. Portfolio-wide view and learning processes
3.1 Portfolio management and mechanisms for learning
3.2 Monitoring, Evaluation and Learning systems
3.3 Distributional balance across the portfolio

3.4 Coherence opportunities and risks
4. Mission identity and culture
4.1 Culture of managing for development impact
4.2 Implications of limited development focus across the GCRF system
4.3 Risks for 'Do No Harm'
4.4 Implications of development competency for stakeholder and community engagement

# GCRF Theory of Change



## Annex 4: Technical note

This technical note summarises the process for data set curation for two funds: the Global Challenges Research Fund and Newton Fund. The data presented in this report relates only to the Global Challenges Research Fund, but derives from a separately commissioned outputs analysis carried out for BEIS<sup>180</sup>. This technical note is the complete annex of the analysis of outputs, and therefore includes the approach carried out for compiling datasets for both funds.

In order to compile the information on GCRF and Newton fund for this report, three sources of information were used:

- BEIS tracker (GCRF Only) (BEIS Tracker 31 Aug 2020.xlsx)
- Gateway to Research (<https://gtr.ukri.org/>)
- Dimensions ( dimensions.ai )

Data manipulation was performed in a number of Jupyter Notebooks. Notebooks used are supplied as GCRF.html, and Newton.html

### About Dimensions

Dimensions offers a comprehensive collection of linked data in a single platform: from grants, publications, datasets and clinical trials to patents and policy documents. The database links publications and citations, investigators and their institutions, with related grants and supporting funders; article metrics; the related patents, clinical trials, policy documents, and datasets, to deliver a holistic view of the research landscape. By December 2019, Dimensions contained more than 106 million publications.

### The philosophy behind Dimensions

Dimensions is constructed according to the following principles:

- Some parts of the system must be freely available to anyone in order to ensure that the whole community can benefit. This means that the database must be created in an efficient manner, using automated routines and technologies such as AI, that allows a free offering to be delivered in a sustainable manner.
- Data must be made as openly available as possible so that any metrics built on the database can be independently calculated and verified.
- Items in the database, wherever possible, should be associated with open unique persistent identifiers. Beyond this, existing open standards should always be used where they are fit for purpose and stable enough to be relied upon.
- The database should not be selective but rather should be open to encompassing all scholarly content that is available for inclusion. In practice, the bar for inclusion should

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<sup>180</sup> This relates to a separate piece of work commissioned by BEIS: **Itad/RAND and Digital Science, 2021. Outputs analysis: GCRF and Newton Fund, 31 March 2021.**

be the association of a record with a recognized unique identifier. The community should then be able to choose the filter that they wish to apply to explore the data according to their use case.

- Dimensions should include metrics that are close to the data (i.e., accepted, externally defined metrics that are computationally expensive to calculate) or those the community have asked to be included. Dimensions should not seek to establish its own set of metrics.

In line with these principles, Dimensions offers a free search interface across its publication dataset, and although not indexed, information on all of all the items in Dimensions can be reached by url, without the need to be logged in.

For instance, the following Dimensions url describes the grant “Newton001 Proof-of concept screen to counteract Bothrops toxins targeting tissue cohesion“

<https://app.dimensions.ai/details/grant/grant.3959351>

publication citations to the grant can be viewed on the page, or directly via the following url construction:

[https://app.dimensions.ai/discover/publication?or\\_subset\\_project\\_subset=grant.3959351](https://app.dimensions.ai/discover/publication?or_subset_project_subset=grant.3959351)

## Frequency of Update

Different data items within Dimensions are updated at different frequencies

- Publications, datasets, clinical trials and policy documents are updated daily.
- Patents data is updated weekly
- Grants data is updated monthly
- Base set data (e.g. new journals, researcher profiles, clinical trial registries, patent offices) is updated 2-4 times a year.
- Metrics are updated either daily (citations, recent citations, Altmetric attention scores) or ca. 2-4 times a year (FCR, RCR)

## Comparison of bibliographic data sources

In January, authors at CWTS Leiden conducted an independent Large-scale comparison of bibliographic data sources. With regards to Dimensions, it noted that

- The publication coverage of Dimensions was similar to Scopus. Within the comparison window, Scopus 27 Million records, Dimensions 36.1M, with an overlap of 21.3 Million. Dimensions covers all publications with a record in Crossref, whereas Scopus makes editorial decisions on what articles to include, potentially based on document type. Dimensions’ decision not to editorialise the data is in line with the authors belief that

data sources should be as comprehensive as possible while filters for making relevant selections of the scientific literature should be provided on top of the data.

- Although Dimensions relies strongly on data from Crossref, it also “benefits from data received directly from publishers, enabling the Crossref data to be enriched in various ways, in particular by adding citation links, but also by adding abstracts, affiliation data, and so on.”
- Article type classifications are less granular in Dimensions compared to Scopus and Web of Science – No direct distinction is made between an editorial and a research article, although the authors demonstrate alternative approaches based on other properties of the article (such as citations) can be used.
- Proportionally, Dimensions covered more material in languages other than English - 14%, compared to Scopus 10%

In addition, Dimensions is a database of Grants, Policy documents, Clinical Trials, Patents, and Datasets. Critically, Dimensions builds the links between documents based both on detecting links to its CC0 database of grid identifiers, as well as links to its indexed grant data.

### **Dimensions as a Grants Database**

Grants data of over 600 funders worldwide is provided directly by funders themselves or from public sources .

- To make links between publications and grants, Dimensions:
- extract and analyse the acknowledgements section of publications to identify specific grants or the funder name, and then use the extracted information to form the link
- processes the links associated with the funding data when this is integrated from the funder
- extract connections from PubMed and CrossRef.

### **Data Quality practices in Dimensions**

Dimensions is committed to providing high quality data, both by favouring precision over recall in its data enhancement processes, as well as correcting any mistakes or omissions identified via its global user community.

### **Use of External Classifications for Reporting**

Dimensions currently has 8 different external classifications that are used to classify all objects in the system

- Fields of Research (FoR)
- Research, Condition, and Disease Categorization (RCDC)
- Health Research Classification System (HRCS)
- Broad Research Areas (BRA)



- Health Research Areas (HRA)
- International Cancer Research Partnership (ICRP) CSO and Cancer Type codes
- Sustainable Development Goals (SDGs)

Fields of Research and Sustainable Development Goals are available in the free to access version of Dimensions, whilst the other 6 require a subscription.

All classifications are added to papers using machine learning. Briefly, this is done by taking a set of documents coded by subject matter experts in that system, and then feeding these into the Dimensions machine learning algorithm, before then using what the system has learned to automatically categorise new documents. The algorithms are refined through identification of false positives and negatives, and once a high enough level of accuracy has been achieved these definitions are then used in Dimensions to automatically label all information coming into the system. Publications can receive more than one classification where appropriate.

### **Methods of accessing Dimensions data**

Dimensions can be accessed via a number of ways programmatic ways

Dimensions analytic api: <https://docs.dimensions.ai/dsl/>

Dimensions on google big query: <https://docs.dimensions.ai/bigquery/index.html>

Along with the documentation provided above, two sets of cookbooks provide an overview of how to use the two services <https://api-lab.dimensions.ai/>, <https://bigquery-lab.dimensions.ai/>

### **About Gateway to Research**

Gateway to Research is provided by UKRI, and is described as follows (<https://gtr.ukri.org/resources/about.html>):

The Gateway to Research (GtR) website has been developed by the UK Research and Innovation (UKRI) to enable users to search and analyse information about publicly funded research.

Gateway to Research publishes information from a variety of source systems. This information is not transferred to Gateway to Research on a real-time basis and the information is processed against a set of business rules to determine suitability for publication.

Gateway to Research may not exactly reflect the information shown in the source systems.

It is not possible to change information directly on Gateway to Research. Changes should be made or requested through the usual channels for each system.

Two Application Programming Interfaces (APIs) have been provided as a way of accessing the information directly from other Information Systems

The GtR website has been developed as part of the Innovation and Research Strategy of the Government's Department for Business, Energy, Innovation and Skills (BEIS) and includes data from the following funding organisations:

- Arts and Humanities Research Council (AHRC)
- Biotechnology and Biological Sciences Research Council (BBSRC)
- Economic and Social Research Council (ESRC)
- Engineering and Physical Sciences Research (EPSRC)
- Medical Research Council (MRC)
- Natural Environment Research Council (NERC)
- Science and Technology Facilities Council (STFC)
- Innovate UK
- National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)

Outcomes from Research Council funded projects are collected through Research Fish which went live in December 2009.

### **Update Cycles within Gateway to Research**

Gateway to Research is updated periodically with publications throughout the year. Other information is required to be submitted to Research fish in the submission period from 1 February 2021 to 11 March 2021. As at the 24th March, the last update to Gateway to Research from Researchfish was the 1st of March 2021.

### **BEIS tracker (GCRF Only)**

BEIS tracker data was loaded into a pandas dataframe. Project numbers to match to project numbers in Gateway to Research were extracted from the BEIS Unique ID using the follow string manipulation:

```
master_brief['grant_id'] = master_brief['BEIS Unique ID'].fillna("").str.\
    replace('_GROW',"").str.\
    replace('_GRTA-T',"").str.\
    replace('GCRFSTARS2019',"").str.\
    replace('GCRFSTARS2020',"").str.\
    replace('Co_MR',"").str.\
    replace('Xo_MR',"").str.\
    replace('Co_ES',"").str.\
```

```
replace("\u00a0","").str.\nreplace("\u2013","").str.\nreplace("\'',"").str.\nreplace("\n","").str.\nreplace(r'/BB',r'_/BB').str.\nreplace('/1_','/1').str.\nreplace('/2_','/2').str.\nsplit('_').apply(lambda l: l[-1]).str.\nstrip().\n\napply(lambda s: s.split('/')[-3][-2:] + '/' + s.split('/')[-2]+'/' + s.split('/')[-1][0]\n       if len(s.split('/')) >=3 else s)
```

Based on the format identified in the BEIS tracker, AMS GCRF grant ids were searched for directly in dimensions using the format “AMS-GCRF” in the grant number

Grant ids were also extracted from the Royal Academy of Engineering, British Academy, and the Royal Society.

To significantly reduce the chance of false positives, acknowledgements that matched the grant number were also required to identify the funding partner.

Delivery Partner	Publications identified	Would also have been picked up with “Global Challenges Research Fund”
------------------	-------------------------	-----------------------------------------------------------------------

Royal Academy of Engineering	16	0
------------------------------	----	---

British Academy	20	7
-----------------	----	---

Royal Society	99	9
---------------	----	---

Within the BEIS tracker, delivery partners other than those identified above do not have public project identifiers that have been used publicly.

### **Quality Control of the BEIS tracker**

Information recorded within the BEIS tracker is recorded manually. BEIS is responsible for its accuracy.

## Gateway to Research

Gateway to research information was obtained using the Gateway to Research API using the projects endpoint: <https://gtr.ukri.org/gtr/api/projects>. A total of 115429 projects were downloaded, by paging through the results 100 at a time:

```
gtrl=[]

from time import sleep

page=len(gtrl)

r = dict(page=page, totalPages=len(gtrl)+1)

#gtrl = []

while r['page'] < r['totalPages']:

    page += 1

    print(page,r['totalPages'])

    try:

        r = requests.get(f'https://gtr.ukri.org/gtr/api/projects?p={page}&s=100' ,headers=headers,
verify=False).json()

    except:

        sleep(10)

        print('trying again...')

        page -= 1

    gtrl.append(r)
```

Projects associated with GCRF and Newton were then extracted using the “rcukProgrammes” field.

```
projects.rcukProgrammes = projects.rcukProgrammes.apply(lambda l: [r['text'] for r in
l['rcukProgramme']] if type(l)==dict else l)
```

## Extracting links to outputs

Links to outputs were extracted by processing the links field:

```
Newton.links = Newton.links.apply(lambda l: l['link'])
```

```
project_links = Newton.explode('links')
```

```
project_links['link_type'] = project_links.links.apply(lambda o: o['rel'])
```

```
project_links['link_href'] = project_links.links.apply(lambda o: o['href'])
```

```
project_links['link_oa'] = project_links.links.apply(lambda o: o['otherAttributes'])
```

Based on the link type, the following link types were extracted:

- 'DISSEsUCT'

Further information about Publications (type and doi) and Policy (type) records were downloaded by downloading the individual links for each of the Publication and Policy records. This information was loaded into database tabled (BigQuery) to be queried alongside Dimensions data

### **Quality Control for UKRI data**

UKRI have established well document reporting processes for researchers to manually report their outcomes. These processes are embedded into institutions and supported with annual reporting cycles, with penalties for failing to submit reports. For each submission period, researchers must declare that their records are accurate and up to date.

Limited further quality control on the GtR dataset was undertaken to remove duplicate publications counts across projects through the use of dois. Further manual quality control of outputs without external identifiers would limit the ability to compare results with other subsets of UKRI data.

### **Dimensions**

Method of Interrogation

Dimension data was interrogated using Google BigQuery (GBQ).

To include policy in the analysis, pattern data was loaded into GBA from the Dimensions API

Data on GCRF/Newton Publications and projects was also loaded into GBQ

Three main methods were used to extract information from Dimensions:

1. Grants in Gateway to research were identified by their UKRI program classification. Additional grants were matched to gateway to research based on the UKRI grant numbers in the BEIS tracker. By joining dois extracted from Gateway to Research Projects to publication records in Dimensions, additional grants associated with these publications could be extracted. (along with citing patents, policy and clinical trials). 99% of dois were matched to records in Dimensions. No article type restrictions were applied to the results, so matches will reflect book chapters, proceedings, articles, monographs and preprints. Preprints with resulting publications are removed from the analysis

2. By joining grant numbers extracted from GTR to grant records in Dimensions, all resulting publications linked to these grants in Dimensions were added (along with citing patents, policy and clinical trials)
3. By searching the acknowledgement section of papers in Dimensions, publications could be identified that explicitly mentioned the “Newton fund” (or name variants) or the “Global Challenges Research Fund.” From these records, associated grants, citing patents, policy and clinical trials were also included in the analysis. For the GCRF, grant ids were also searched for directly in Dimensions where available (see above note)

Each of these methods was brought together in a single query for analysis:

```
QUERY=""
```

```
WITH
```

```
    resulting_ids as (select p.id , pr.id resulting_id
                      from `dimensions-ai.data_analytics.publications` p
                      inner join `dimensions-ai.data_analytics.publications` pr
                        on pr.doi = p.resulting_publication_doi),
```

```
    pub_grants as (
```

```
      SELECT p.id publication_id, grt.id grant_id
```

```
      FROM `dimensions-ai.data_analytics.publications` p,
```

```
        unnest(funding_details) fd
```

```
        inner join `dimensions-ai.data_analytics.grants` grt
```

```
          on fd.grant_id = grt.id
```

```
          WHERE p.year >= 2016
```

```
    ),
```

```
    pub_pats as (
```

```
      SELECT p.id publication_id, pat.id patent_id
```

```
      FROM
```

```
        `dimensions-ai.data_analytics.patents` pat,
```

```
        unnest(pat.publication_ids) patpub
```

```
inner join `dimensions-ai.data_analytics.publications` p
  on patpub = p.id
  and p.year >= 2016

),
pub_trials as (
SELECT p.id publication_id, ct.id trial_id
FROM
  `dimensions-ai.data_analytics.clinical_trials` ct,
  unnest(ct.publication_ids) ctpub
inner join `dimensions-ai.data_analytics.publications` p
  on ctpub = p.id
  and p.year >= 2016

)
SELECT g.id,
  g.name,
  g.address.country,
  grt.id grant_id,
  CASE WHEN prid.id is not null THEN prid.resulting_id ELSE p.id END publication_id,
  pl.id policy_id,
  ppats.patent_id,
  pt.trial_id
FROM
  `ds-consultancy-gbq.sjcporter_consultancy.gcrf_grants` ng
  inner join `dimensions-ai.data_analytics.grants` grt
```



```
    on (grt.grant_number = ng.grant_number) OR
REGEXP_CONTAINS(UPPER(grt.grant_number),"AMS-GCRF")

left join pub_grants pg
    on pg.grant_id = grt.id

left join `dimensions-ai.data_analytics.publications` p
    on p.id = pg.publication_id
    and p.year >= 2016

left join resulting_ids prid
    on prid.id = p.id

left join `ds-consultancy-gbq.sjcporter_consultancy.policy_links` pl
    on pl.publication_ids = p.id

inner join `dimensions-ai.data_analytics.grid` g
    on g.id = grt.funder_org

left join pub_pats ppats
    on ppats.publication_id = p.id

left join pub_trials pt
    on pt.publication_id = p.id

UNION DISTINCT

SELECT g.id,
    g.name,
    g.address.country,
    grt.id grant_id,
    CASE WHEN prid.id is not null THEN prid.resulting_id ELSE p.id END publication_id,
    pl.id policy_id,
    ppats.patent_id,
```

```
pt.trial_id
from
  `dimensions-ai.data_analytics.publications` p,
  unnest(funder_orgs) f
  inner join `dimensions-ai.data_analytics.grid` g
    on g.id = f,
  unnest(funding_details) fd
  left join `dimensions-ai.data_analytics.grants` grt
    on fd.grant_id = grt.id
  left join `ds-consultancy-gbq.sjcporter_consultancy.policy_links` pl
    on pl.publication_ids = p.id #,
  left join resulting_ids prid
    on prid.id = p.id
  left join pub_pats ppats
    on ppats.publication_id = p.id
  left join pub_trials pt
    on pt.publication_id = p.id

WHERE
  p.year >= 2016

  AND REGEXP_CONTAINS(acknowledgements.preferred,"Global Challenges
Research Fund")
UNION DISTINCT
SELECT g.id,
  g.name,
  g.address.country,
```

```
grt.id grant_id,  
CASE WHEN prid.id is not null THEN prid.resulting_id ELSE p.id END publication_id,  
pl.id policy_id,  
ppats.patent_id,  
pt.trial_id  
from ds-consultancy-gbq.sjcporter_consultancy.gcrf_publications gcrfp  
  inner join `dimensions-ai.data_analytics.publications` p  
    on (  
      (lower(p.doi) = lower(gcrfp.doi2)) OR  
      (p.pmid = gcrfp.pubMedId)  
    )  
  and p.year >= 2016,  
  unnest(funder_orgs) f  
  inner join `dimensions-ai.data_analytics.grid` g  
    on g.id = f,  
  unnest(funding_details) fd  
  left join `dimensions-ai.data_analytics.grants` grt  
    on fd.grant_id = grt.id  
  left join `ds-consultancy-gbq.sjcporter_consultancy.policy_links` pl  
    on pl.publication_ids = p.id #,  
  left join resulting_ids prid  
    on prid.id = p.id  
  left join pub_pats ppats  
    on ppats.publication_id = p.id  
  left join pub_trials pt  
    on pt.publication_id = p.id
```

''''

```
dimensions_disaggregated_result = client.query(QUERY).to_dataframe()
```

The results of the query allows the number of unique publications, policy documents, patents, and clinical trials to be associated with each unique grant. Grants have also been associated with their funding body and country of origin.

#### Quality control and Query Strings for the Newton fund and GCRF

The following search strings were used to search for the Newton fund and the Global Challenges Research Fund:

Fund	Search String
Newton Fund <sup>181</sup>	Newton fund
	fundo Newton
	Newton-Picarte fund
	Fondo Newton-Picarte
	UK-China Research and Innovation Partnership Fund
	Newton-Caldas Fund
	Fondo Newton-Caldas
	Newton-Mosharafa Fund
	Newton-Bhabha Fund
	Newton Fund Indonesia
	Newton-Khalidi Fun
	Newton-Utafiti Fund
	MYS Newton-Ungku Omar fund
	Newton-Paulet fund

<sup>181</sup> <https://www.pvgglobal.uk/devpubmetric/newton-fund-names/>

	Newton Agham Fund
	UK-South Africa Newton Fund
	Newton UK - Thailand Research and Innovation Partnership Fund
	Newton-Katip Celebi Fund
	Newton UK - Thailand Research and Innovation Partnership Fund
	Newton-Katip Çelebi Fonu'dur
	Quỹ Newton Việt Nam
Global Challenges Research Fund	"Global Challenges Research Fund"

To ensure that false positives are not included in the data, the use of fully expanded strings with no abbreviations reduce to a minimum the chances of returning false matches.

### **Classifying grants by Units of Assessment**

For this project we have chosen to use Units of Assessment for analysis, as they are discipline based and familiar to a UK audience. Use of an external classification systems also allows comparisons to be made across annual reports even if the data provider changes, and facilitates comparison with other external datasets (such as the REF)

For analysis requiring analysis of data by panel, Units of Assessment were extracted from Dimensions via the grt.category\_uoa.full field against grants in Dimensions. Units of Assessment were then converted in Panels by taking the first letter of each code.

### **About Units of Assessment**

Units of Assessment were created to support the Research Excellence Framework, and are used to describe 34 broad categories of research organised into four panels.

(<https://www.ref.ac.uk/panels/units-of-assessment/>). Units of Assessment are automatically assigned to all grants and publications in Dimensions using machine learning, derived a training set of assigned data.

### **Addressing the limitations of the current reporting approach**

As a part of this reporting process, the following limitations were identified:

- Available outputs for both funds is uneven. For other delivery partners other than UKRI, outputs can only be detected if the fund has been acknowledged in associated research paper.
- Further mitigation exists for the GCRF, as some Delivery Partners assign public grant numbers to their funded activities, and these can also be detected if researchers have

used them in their acknowledgements. This approach supplements Researchfish reporting, however it relies on researchers having a common understanding of how to acknowledge the funding they have received.

- For the Newton fund, funding has not been tracked at the project level, so no further information for non UKRI projects is available beyond the name of the fund being referenced in the acknowledgements
- This report falls before the annual reporting cycle for Researchfish, making 2020 data underreported, although searching for papers via the acknowledgement section mitigates this to some extent.

This report is an aggregation of self reported data in Researchfish. More nuanced assessment of outputs at the record level is not readily scalable.

### **Improvements and recommendations on data quality:**

To improve the quality of the information within this report in subsequent years, it will be necessary to work with Delivery Partners outside of the UKRI to request additional researcher reported data that they might hold, including:

- Lists of projects funded by public grant id (this is particularly important for the Newton fund)
- Lists of publications internally reported to the Delivery Partner
- Additional knowledge of how the fund might be referred to in research paper acknowledgements
- Working with delivery partners to improve acknowledgement of GCRF and the Newton fund on all public outputs.

BEIS may also wish to consider aligning GCRF and Newton fund reporting with the UKRI reporting cycle to increase completeness.

Use this template to create business as usual documents. **DO NOT** use this template for documents directly related to the Industrial Strategy

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This publication is available from: [www.gov.uk/government/publications/global-challenges-research-fund-gcrf-stage-1a-evaluation](http://www.gov.uk/government/publications/global-challenges-research-fund-gcrf-stage-1a-evaluation)

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