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## Article

# Rethinking North–South Research Partnerships Amidst Global Uncertainties: Leveraging Lessons Learned from UK GCRF Projects during COVID-19

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**Abstract:** International research and development projects (or grand challenge projects) consist of multicultural, multi-country, multi-sectoral, and multi-stakeholder initiatives aimed at poverty reduction. They are usually conceived as partnerships between actors in the global north–south. The COVID-19 pandemic was a major unexpected disruption to ongoing projects and challenged their already complex management. The aim of this paper is to present evidence on how international development projects were impacted by COVID-19 with a particular focus on the relationship between research institutions in the north and south. We conducted a mixed-methods research study, combining a reflective exercise with the co-author team and a survey with principal investigators, project managers, and capacity development leads drawn from 31 Global Challenges Research Fund (GCRF) projects funded through the UK government’s Official Development Assistance (ODA) and focused on social–ecological system research. The survey contained closed- and open-ended questions in order to (i) demonstrate how those involved in managing projects adapted to risks, including both threats and opportunities, presented by the COVID-19 pandemic, and (ii) consider the implications for tailoring adaptive management approaches in international research projects amidst uncertainties, with a special focus on enhancing equities in global north–south partnerships. The paper offers the following recommendations on designing, planning, and implementing international research and development projects: (i) devolve project management in order to enhance project resilience and improve north–south equities; (ii) allocate dedicated resources to enable equitable north–south research partnerships; (iii) rely more on hybrid and agile approaches for managing a project’s life cycle; and (iv) improve resource flexibility, transparency, and communication through enhanced funder–implementer collaboration.

**Keywords:** Official Development Assistance; Global Challenges Research Fund; pandemic; capacity development; project management; international development; global north–south research collaboration; social–ecological system research

## 1. Introduction

University-led projects receiving Official Development Assistance (ODA) funding are often based on a multi-stakeholder model, which involves a university from a donor country formally partnering on a project with, for instance, other universities, international non-governmental organisations (NGOs), inter-governmental organisations, and local civil society organisations in ODA recipient countries. These projects aim to broadly deliver research that can inform and shape development policy and practice, develop the research capacity and capabilities of organisations and individuals in low and middle-income countries, strengthen global north–south relationships, and are often aligned with the United Nations Sustainable Development Goals (UN-SDGs). These projects are often referred to in the literature as grand challenge projects [1], global projects [2], or international development projects [3]. These initiatives share the goal of poverty reduction and their outcomes are often intangible or difficult to measure [1,4]. They tend to be multicultural, multi-country, multi-sectoral, multi-organization, and multi-stakeholder initiatives conceived as partnerships between actors in the so-called global north–south. These programmes are usually very ambitious and complex to manage, and their success is difficult to assess [5]. There have only been a few attempts in the literature to analyse and compare these types of projects, see, e.g., [1,4,6]. Estimates suggest that more than half of public policy projects funded by donors do not achieve their intended impacts in terms of international development [1]. Still, it is difficult to identify common success or failure conditions as projects often face complex and diverse contexts, i.e., interconnected political, legal, cultural, organizational, social, economic, and environmental challenges [3].

Since the onset of the COVID-19 pandemic, effective project management has faced serious challenges due to a wide range of factors. In particular, the pandemic constituted a moving feast of unidentified risks, so-called ‘unknown unknowns’, which could not have been planned for. Evidence shows the complex outcomes of COVID-19 on society, the environment, and the economy [7–11], in addition to how negative impacts have been experienced differently between social groups and across world regions [12,13]. Education and scientific research have also been severely impacted [14] with disproportionate effects reported based on: (i) gender, with females being impacted most severely because they traditionally undertake a higher share of home and childcare responsibilities [15–18]; (ii) the research field, with laboratory-based researchers disadvantaged because of the impracticality of home-working [18,19]; and (iii) academic career stage, with early career researchers on fixed-term contracts unable to travel to other institutes and field sites to collect data, build their research networks and professional profiles, and generate research outputs [20,21]. Global travel restrictions, in particular, have challenged international collaboration [22–26]. For instance, Fry et al. [27], in comparing authorship in coronavirus-related research before and during the first four months of the pandemic, observed a consolidation of existing scientific relationships at the expense of new international collaborations. While some studies have identified a general decrease in the time devoted to research, e.g., [18,28], other studies identified a higher number of scientific publications [22,28,29], most likely arising from data generated pre-pandemic and/or data that could be generated under lockdown restrictions.

Ultimately, the COVID-19 pandemic has hindered research aimed at achieving the UN-SDGs [30,31] as it has exacerbated pre-existing disparities between the global north and south, thus resulting in the reinforcement of a colonial divide despite the surge of calls for decolonizing academia [32,33] and a more equitable engagement in agenda setting [34]. For instance, the digital divide between the north and south has posed significant barriers to effective remote working in the vast majority of countries in the global south, especially when sustaining collaborations with international colleagues [23,35]. Research funding and management infrastructure is underdeveloped in many regions and researchers based in the south are often dependent on international collaborations with those based in the north, particularly to mobilise financial resources [36]. Additionally, north–south partnerships are often characterised by knowledge and theory production in the north and data collection

and field studies in the south [37–39], creating complex interdependencies between the two [32]. Moreover, new opportunities—or positive risks—have emerged as a result of the pandemic, which may be leveraged for producing long-term changes [40]. For instance, the proliferation of online scientific conferences with reduced or no participation fees has given researchers the opportunity to attend many more events than they would have in normal conditions, and significantly reduced the carbon footprint of such events. Moreover, students and researchers based in the south, who might otherwise not have had the financial and/or time resources to participate, have been exposed to a wider knowledge base and more opportunities to share their research with larger audiences [41–43].

The aim of this paper is to present evidence on how international research and development projects were impacted by the COVID-19 pandemic. By critically reflecting on these experiences, we offer insight into designing and planning such projects amidst global uncertainties, which include pandemics and may also extend to violent conflicts, natural disasters, acute political instabilities, and global financial crises. In particular, we aim to provide recommendations to enhance north–south relationships through more equitable practices, which will strengthen the resilience of project partners when facing ‘unknown–unknown’ risks that cannot be identified as part of project planning exercises and, therefore, cannot be managed through standard mitigation strategies and/or contingency planning. Our recommendations stem from our collective involvement from 2018 to 2022 in the management of multi-stakeholder projects funded by the Global Challenges Research Fund (GCRF) as part of the UK government’s ODA. We present the results of a study conducted with principal investigators, project managers, and researchers from 31 different GCRF projects focusing on social–ecological system research in order to (i) demonstrate how those involved in managing projects attempted to adapt to risks, inclusive of both negative risks (threats) and positive risks (opportunities), presented by the COVID-19 pandemic, and (ii) consider the implications of those tailoring project management approaches within international research and development projects that have a special focus on enhancing equities within north–south partnerships. The paper contributes to the existing literature in several ways. It represents one of the few COVID-19 impact assessments on international development research. It surveys projects belonging to two large ODA programmes funded by the same donor, thus easing the comparison of projects within a similar donor policy and institutional context. Finally, it provides a critical reflection of the north–south collaboration in research and development using the COVID-19 crisis as a unique opportunity to observe, evaluate, and revise the status of this relationship after more than a decade of calling for more equitable north–south research partnerships and decolonizing academia.

## 2. GCRF Programmes: Supporting International Development Goals

The Global Challenges Research Fund (GCRF) is a UK ODA-funded programme that aims to address global development challenges, broadly speaking, defined in accordance with the UN-SDGs. Following the international definition of ODA, the primary aim of the GCRF is to promote the development and welfare of countries in the global south and to “strengthen capacity for research, innovation and knowledge exchange in the UK and developing countries through partnerships”. As such, the GCRF promotes interdisciplinary research, capacity strengthening in southern research institutions, and the inclusion of diverse stakeholders at different levels, ranging from civil society to policymakers, with the double aim of co-developing challenge-led research and strengthening research impacts. Project research and capacity-strengthening activities under this programme, therefore, explicitly improve development policies and practices. Focal areas include research on social–ecological systems, water and food security, public health, and the sustainable management of natural resources.

The GCRF comprises a total of GBP 1.5 billion distributed across different programmes. In this paper, we focus on the GCRF Grow and GCRF Hub programmes in particular. The GCRF Grow cohort was launched in 2017 with an investment of GBP 225 million across 37 projects. These projects aimed to grow research capacity and capabilities around the globe

to address specific challenges faced in the global south while generating long-lasting and equitable partnerships, ideas, and knowledge. They involved UK institutions collaborating with research and development institutions based in 60 partner countries. The GCRF Hub cohort was composed of 12 interdisciplinary research hubs working across a range of development challenges to support global partnerships. Each was awarded between GBP 13 million and GBP 20 million for a period of five years starting in 2019, bringing together researchers, governments, international agencies, NGOs, and community groups in the global south and the UK to share knowledge and expertise.

GCRF grants represent a change from traditional UK-funded research grants, moving from a single university project team managing the entire project life cycle to multi-stakeholder partnership projects involving multiple organisations across different countries and sectors, collaboratively driving the project and co-developing solutions to complex development challenges. This has necessitated adaptive project management approaches with learning and adjustment as their central tenets [44]. Both the GCRF Grow and Hub programmes were impacted by two successive “unknown unknowns” in 2020: the COVID-19 pandemic and the decision taken by the UK government spending review to reduce ODA from 0.7% to 0.5% of the UK’s gross national income [45]. These two events resulted in increased uncertainty around the daily management of research activities, and strained partner relationships as a result of the severe restrictions on planned activities and decreased financial resources, both at very short notice.

### 3. Methodology

We followed a two-stage mixed-methods approach in our research to capture experiences of the GCRF Grow and Hub project teams and project-level impacts.

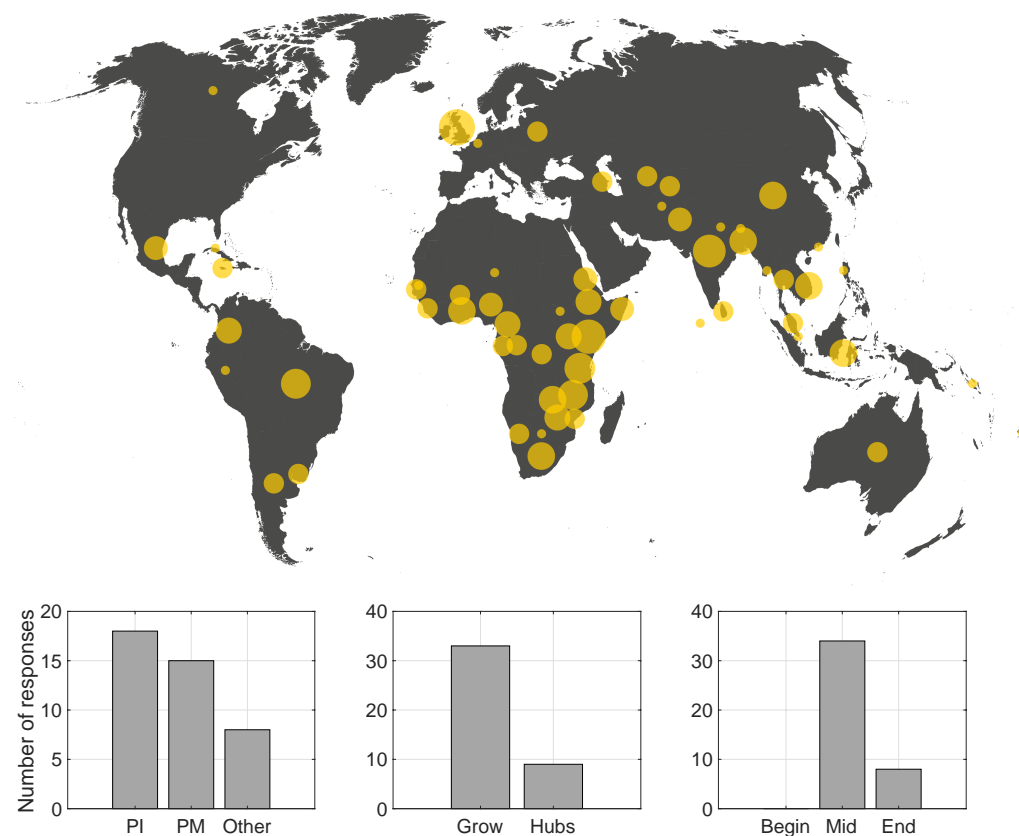
In the first stage, a reflective exercise was carried out by each co-author of this paper, with input from colleagues on the same project as them. In their roles as team members working on a subset of seven GCRF projects (see Table A1), they wrote down the impacts of the pandemic and travel restrictions on project activities, how they were managed at the time, the key challenges and opportunities that emerged at different stages of the pandemic, and any positive or negative outcomes. These essays were then analysed inductively to develop emergent insights on experienced benefits and challenges. Combined with the secondary literature review presented in Section 1, data were organised into high-level conceptual categories to facilitate inter-project comparison and informed the second stage of research, which was an online survey to pull together evidence from across the wider GCRF Grow and Hub cohorts.

The survey was designed to capture project-level impacts and was sent to principal investigators, project managers, and capacity development leads—people with a good overview of the GCRF Grow and Hub projects in question. Purposeful sampling was employed and based on the assumption that their combined perspectives would provide the most complete overview of how the COVID-19 pandemic affected the projects. The survey was designed and administered online using Google Forms. It had open-ended and closed-ended questions, including multiple choice and Likert scale (see Appendix B for the full questionnaire). We complemented predefined categories with open-ended questions to capture potential unique impact/opportunities experienced by the projects, to identify strategies adopted to compensate for the COVID-19 disruption while the project was running, and to highlight strategies that might have been adopted in the project design phase if such disruptions could have been anticipated. As the UK ODA funding cuts were communicated while the survey was live, responses were likely to have been affected by this additional uncertainty that, in most cases, significantly increased the challenges faced by project management staff during the COVID-19 pandemic.

### 4. Results

Our sample was composed of 31 different projects (out of a possible 49 GCRF Grow and Hub project cohorts). In total, 41 individuals responded to the survey, with the majority

(85%) identifying as either principal investigators (PIs) or project managers (PMs) (Figure 1). All but one of these respondents were based in the UK, with responses given on behalf of projects operating in 60 different countries. A majority of respondents identified as being from the GCRF Grow cohort and were mid-stage in the project timeline when COVID-19 occurred. The following sections summarise the analysis of the quantitative and qualitative survey replies, complemented by insights from the authors in their roles as team members of seven GCRF projects (see Table A1).

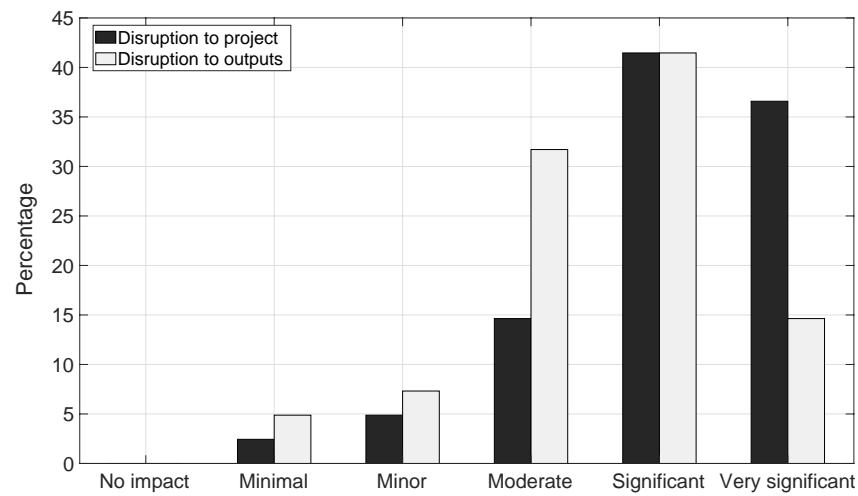


**Figure 1.** Survey participants ( $n = 41$ ) and their respective project backgrounds. (**Top**) Geographical distribution of where survey respondents' projects were active (the circle size corresponds to the number of times the country was recorded); (**bottom left to right**) respondent's position, with 'PI' corresponding to the principal investigator, 'PM' corresponding to the project manager, 'Other', including, e.g., project coordinator, data analyst, capacity development lead; GCRF Grow or Hub cohort; project stage when COVID-19 occurred.

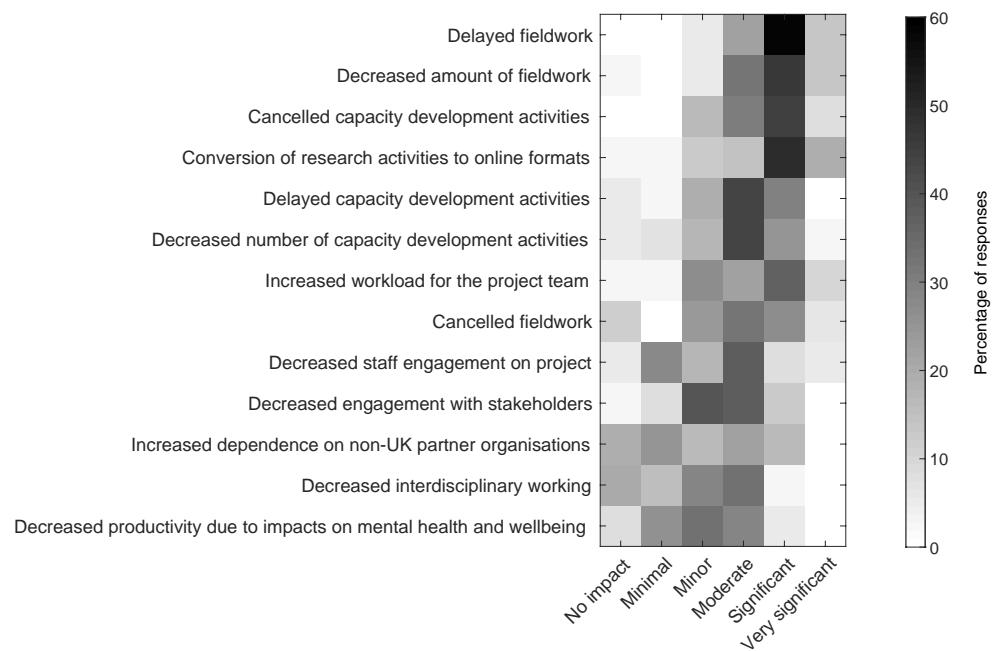
#### 4.1. Challenges Presented by COVID-19

At the time of the survey, 78% of respondents reported significant to very significant levels of disruption due to COVID-19 and 56% of respondents reported these disruptions to have caused significant to very significant impacts on their outputs (Figure 2).

Of the range of potential constraints ( $n = 13$ ), according to the high-level conceptual categories identified, respondents reported experiencing on average moderate to significant negative impact (Figure 3). Fieldwork (both in terms of delays and amount) and capacity development activities were reported to be most severely impacted. While project staff workload significantly increased, decreased productivity and engagement with project activities was not reported to impact progress—on the whole researchers and managers across the projects were able to maintain the viability of all projects. Minimal to minor impact was perceived on interdisciplinary work and dependence on non-UK partners to conduct research activities.



**Figure 2.** Response to survey questions relating to disruption to the project and project outputs (survey participants’ n = 41).



**Figure 3.** Impacts of COVID-19 resulting from the online survey (participants n = 41). Response to questions (n = 13) relating to specific impacts of the COVID-19 pandemic. The high-level categories are sorted according to the perceived impact from top to bottom.

#### 4.1.1. Impacts on Interdisciplinary Research

To foster international collaborations and/or undertake activities, such as primary data collection across a range of countries, all projects involved an element of overseas travel—either from the UK or among focal countries—which was highly impacted by the restrictions on international travel. Interdisciplinary or transdisciplinary working was negatively impacted in those cases where different and complementary expertise belonged to institutions located in different countries. From the survey, it emerged that, in some cases, partners resorted to their more usual, and ‘safer’, research discipline-specific approaches/methods. This was likely a consequence of a lack of space or freedom (time/funds) to take risks (see Section 4.1.2), the reduced volume of capacity-building activities, and the difficulties of

online communication with partners in the global south experiencing the worst effects of the pandemic.

Several respondents reported delays or cancellations in primary data collection activities due to COVID-19 pandemic restrictions, in particular when collecting data from and/or with communities or significantly affected stakeholder groups. Many projects cancelled, delayed or changed the implementation of their planned research for various reasons, including logistical difficulties resulting from travel restrictions, the impact of the requirement for social distancing, in some instances to protect rural communities from what was initially a city-based (high population density) disease, and out of sensitivity to the profound impact COVID-19 had on the lives and livelihoods of people in the communities where fieldwork was planned. A major component of the research and capacity-strengthening activities revolved around building relationships with local-level stakeholders with a view to strengthen north–south relationships (such as between UK research staff and local civil society and/or government). COVID-19 restrictions imposed a major constraint to stakeholder engagement for all projects and the fundamental mechanisms of building and deepening relationships with stakeholders. A Grow PM explained how acutely this was experienced by their project team, further noting how they attempted to mitigate the risk of relationship breakdown with project partners and participants:

More than three years have been dedicated to forging relationships, build trust, and obtain verbal and written consent for the delivery of the [research project] to more than 1000 research participants, including children under 12 years old based in communities that carry a long history of stagnated peace process[es] [...] Additional time needed to be dedicated to manage expectations due to postponed installation of water treatment systems at household level and health and behaviour interventions due to the COVID-19 pandemic [...]. Trust is a critical element to manage participation [sic] dropout rate and to be able to replicate such an important impact in the regions [that the project] operates. Many marginalised communities have had negative experiences with research, leading to an understandable distrust of research projects and processes, consequently the project risk mitigation also needed to include new routine processes on communication with communities leader and participant families.

The work-from-home policy implemented by several governments around the world impacted all projects, although to different degrees depending on the activities specific to each project. While online working had some benefits (see Section 4.2), the advantages of this were reliant on all partner organisations and team members having access to reliable high-speed internet, continuous electricity supplies, and adequate equipment for home-working. From the open-ended questions, it also emerged that the work-from-home policy particularly impacted those projects involving research and/or capacity-strengthening activities that were reliant on access to specific facilities, such as laboratories. According to respondents, these disruptions delayed data analysis and would likely have an impact on the number of peer-reviewed papers emerging from the projects (see Section 4.1.4). According to a Grow PM report, while researchers on their team initially took advantage of national lockdowns by producing more publications, the remote working context also likely hindered inter- and trans-disciplinary publishing:

Teams were encouraged to use the lockdown time to work on collaborative research papers and expand their own disciplines to develop plans for trans- and interdisciplinary research papers. This communication was included in COVID-19 special edition e-bulletins and monthly executive group meetings. As a result, publication outputs increased, nevertheless, there have been no changes to the dynamics/format of these outputs e.g., increased inter/transdisciplinary or international publications.



#### 4.1.2. Increased Uncertainty on Project Finance and Management and the Role of Funders

Most projects experienced financial and operational issues as COVID-19 influenced the behaviour of the currency market. Grow and Hub funding was awarded in GBP to the UK-based lead institutions, with financial transfers and subsequent transactions conducted in several different currencies. The conversion rate influenced the financial power projects actually had versus forecasted expenditure, e.g., in staff salaries and field trial implementation. Worldwide throughout 2020, many customs offices were closed to the importation of non-essential goods, causing delays in the delivery of field trial equipment and laboratory components. Materials not previously budgeted for, e.g., (COVID-19) personal protective equipment and single-person accommodation, were included as mandatory expenses to enable a return to the field. Additionally, Grow projects in particular experienced increased expenditure on salaries: in many cases, fieldworkers had been hired and ‘upskilled’ just a few months before the pandemic hit and as such continued to be paid to retain knowledge. However, they were restricted from delivering primary project activities (e.g., fieldwork, stakeholder meetings, etc.), which could have otherwise generated significant impacts. The uncertainty relating to the length of restrictions in different countries reduced the ability of projects to plan and adjust activities, deliverables, and budgets. These pressures were further aggravated by delays in funder communications and consideration of no-cost project end-date extensions; for Grow projects, it took more than a year to secure short extensions (three-month extensions for the majority), primarily requested in response to pandemic-related delays. A PI for a Grow project spoke specifically about these issues, underlining the impact of uncertainty on project schedule and cost management, suggesting that funders failed to adequately adapt to uncertainty:

There has been a disillusionment with UK ODA and UKRI procedures among all partners, resulting from the huge delays and mixed messages with regard to extensions (we were asked in May 2020 to apply for costed or no-cost extensions, only to be put on hold for nearly a year, then told to reduce budgets). We are now 7 months away from the planned project end and still have not received a decision with regard to our request for an extension. This has perhaps been the most significant impact on the project—prolonged uncertainty about project duration and budgets.

A majority of survey respondents highlighted that an increased need for flexibility was not always reflected in the funder’s response to uncertainties posed by the COVID-19 pandemic. A PI for a Grow project corroborated this perspective, pointing to inequities in how uncertainties regarding funding decisions were experienced:

Now that there has been a global pandemic, there must be a plan for a future scenario so that programmes are not left waiting for answers or support for many months on end. There must be an acknowledgement of the disproportionate negative impact on early career researchers and female staff and measures put in place to support these individuals, both now and in future programmes.

Faster and clearer communication on the acceptable adaptations (e.g., delays in deliverables), financial flexibility (e.g., change of budget line allocation among consortium partners), and more transparent decision-making would have facilitated more timely support to research partners and reduced the primary uncertainty in project management. However, there were cases where project teams, with funder approval, were able to implement a more adaptive approach to resource management resulting in multiple benefits, including with regard to sustaining outcomes post-project. For instance, as one PM of a Grow project noted:

The budget has been reassessed and the management panel adopted a strategic approach, culminating in being allowed by the funders [...] to take greater flexibility on how the resources are deployed. This has enabled us to offer a funding call for capacity building and support across all of the existing research

and collaborations. Particularly relevant to [our] legacy in capacity building is that this provoked additional calls for equipment purchases for colleagues overseas.

It should be noted that the financial and operational uncertainties reported in the survey were exacerbated by UK Government cuts to the ODA budget in late 2020 (see Section 2) which in turn caused a reduction in the overall GCRF budget. Several Grow and Hub projects were set to receive a lower 2021–2022 budget than initially envisaged. This uncertainty resulted in researchers on fixed-term contracts having no option but to seek new job opportunities earlier than anticipated, thus further disrupting and negatively impacting planned research activities. One Grow PI highlighted:

It is notable that overseas partners were “left to dangle” in March 2021 as the cuts were enacted with their well-being left to individual GCRF Grow projects and Hubs themselves to sort as best they could under the circumstances.

#### 4.1.3. Increased Workload and Stress on Individuals

Interestingly, while increased workload emerged clearly from responses to both the closed questions (see Figure 3) and open-ended questions, issues related to staff mental health and well-being were emphasised only in responses to the open-ended questions on impact and through specific examples in the co-authors’ reflective essays. In addition to the uncertainties detailed in Section 4.1.2, individual team members faced different challenges in their working environments and personal circumstances. Alongside a lack of adequate space or equipment to work remotely, some team members suffered personal loss through COVID-19; had to balance working from home with childcare responsibilities and/or home schooling due to school closures; and/or experienced increased stress and anxiety due to ongoing uncertainty and change. Some staff also found their workload increased as online meetings proliferated over the course of the pandemic and the delivery of other activities (such as teaching and/or research) needed to change and adapt, enhancing the so-called digital fatigue. Similar negative effects have been identified by other research studies, e.g., [46–49]. A Grow project PI cited internal evidence of the effects of COVID-19 on the mental health and well-being of project team members, also noting how experiences of these effects were gendered:

In addition to the direct effects of the lockdown, such as closures and suspension of travel, all programme members have experienced difficulties from March 2020 to the present day. A [project-wide] survey conducted in June 2020 assessed the impact of the pandemic on [project] members, revealing a wide range of unexpected consequences of home working, reduced well-being, and a substantial reduction in a working capacity. Women have been disproportionately affected owing to childcare and homeschooling demands, affecting a significant proportion of [project] (49.5%) staff.

#### 4.1.4. Perceived Reduction in Research Impact and Capacity Strengthening

Many survey respondents reported elements of original research plans being down-scaled because of pandemic-related impacts: delays; disruptions to data collection resulting in less robust analysis; a reduction in interdisciplinary research as researchers retreated to their ‘safe space’ of disciplinary expertise (see Section 4.1.1); and cancellation of inter-comparisons across different countries and case studies. Projects aiming to influence policy had to respond to changes in political environments and decreased accessibility of policy-makers and decision-makers, some of whom had new or shifted priorities. This was particularly true in countries facing political, economic, and/or humanitarian crises. These concurrent crises were compounded by COVID-19, negatively impacting progress on some projects and local institutions, though it is difficult to delineate the extent to which delays are a result of COVID-19, as opposed to challenging work environments more generally.

Delays and cancellations of fieldwork were given as the main causes of disruption in expected publications in terms of the number, quality, and timing. Although 25% of

survey respondents expected the number of publications to be likely the same as planned, they reported that the focus had changed in response to the pandemic and the emergence of new research topics (see Section 4.2). Finally, capacity-building activities were significantly affected, specifically in those projects emphasising capacity-strengthening through secondments. While some activities (such as meetings and generic skills training) were relatively easy to move online, it proved difficult to achieve the full intended outcomes of a secondment through online interaction alone. Travel restrictions required planned secondments to be postponed or cancelled, with reduced opportunity for higher-level experiential learning through informal interactions and knowledge sharing/creation between participants and partners [50]. A Grow PM reflected on the impacts on research staff in south-based countries in particular:

The inability to conduct planned staff exchanges has severely impacted the capacity building potential of the project both in the UK and our ODA partner countries. UK research staff, particularly early career researchers have been unable to visit field sites and gain valuable on-the-ground experience. Similarly, ODA country staff have not been able to receive planned technical training [...]. The opportunities for research staff to network with their peers within their fields of expertise have been limited to online interactions which will inevitably limit the benefits obtained.

#### 4.2. Opportunities Presented by COVID-19

Despite reporting a range of challenges and negative impacts, survey respondents also highlighted some key benefits and/or opportunities resulting from the COVID-19 pandemic. Most respondents, irrespective of the impacts experienced, agreed that skills relative to (digital) communication and creative thinking increased across the project teams (Figure 4).

##### 4.2.1. Increased Awareness of Social Equity and Inclusion in Research

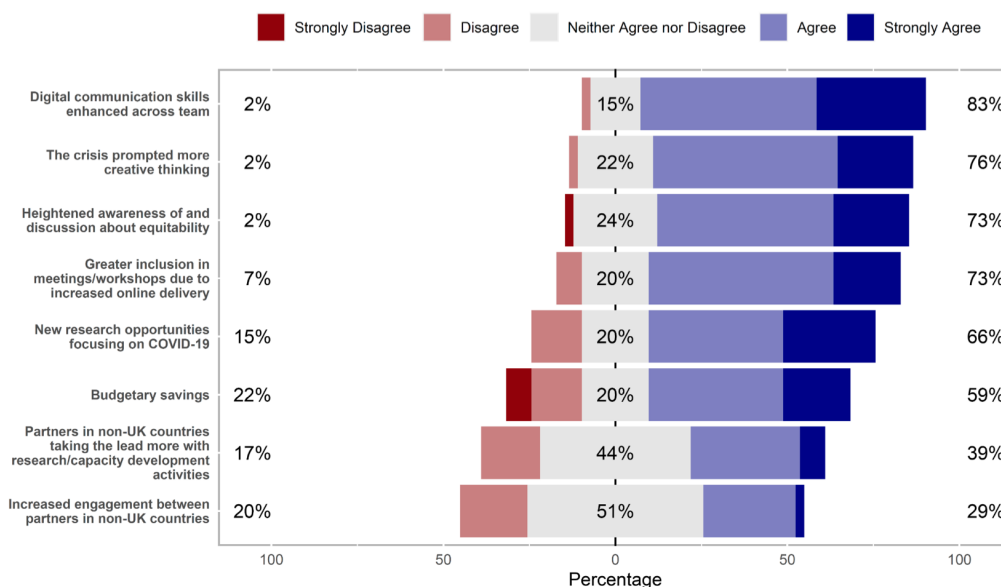
While presenting some challenges, the move to predominantly online working created some unexpected opportunities. For example, the survey results highlighted a general agreement that the COVID-19 pandemic increased awareness of equitability in research (e.g., on the ability to effectively work from home depending on gender, cultural context, resource availability, and internet connectivity)—particularly within the north–south context—and had prompted greater inclusion in meetings due to online delivery, particularly among women and early career researchers. Some projects, for example, observed increased levels of engagement from partners and team members who previously faced technical or personal barriers to engaging with in-person events (e.g., family commitments; visa application refusal; introvert; hierarchical relations among project teams). Public-facing events were also able to reach wider, more international, audiences when held online compared to in-person.

##### 4.2.2. Adapting Research Objectives to Address COVID-19

Many respondents reported that their projects started addressing novel research themes and subsequently obtained findings that would not have been identified if the projects had adhered to their original pre-COVID-19 plans (Figure 4). Several projects found ways to analyse the effects of COVID-19 in their research area, or deliberately refocused project co-creation processes to focus on COVID-19 in response to the emerging pandemic. Examples included: impact on refugees; forced displacement through COVID-19; changes in community engagement; the impact of reduced international trade on farmers; and the impact on pastoral societies. Furthermore, the successful adaptation of the project work was also done at scale, as underlined by a PI for a Hub project:

Our Hub made major impacts and important work during COVID. We pivoted to provide violence prevention resources to 155 million people, and social protection policy engagement to 8 million children [...]. We brought together UN agencies

and 200+ NGOs, FBOs (i.e., faith-based organisations) and private sector organisations to deliver evidence-based COVID-19 violence prevention resources to 155 million people in 198 countries and territories, with 33 national governments using them in their COVID responses.



**Figure 4.** Opportunities of COVID-19 resulting from the online survey (participants  $n = 41$ ). Response to questions ( $n = 8$ ) relating to opportunities and benefits of the COVID-19 pandemic.

#### 4.2.3. Decentralising Project Management Structures to Empower South-based Researchers

The survey respondents had mixed opinions on whether partners in non-UK countries had taken on more leadership responsibilities and were engaging with one another more as a result of the pandemic. Of the responses received, 39% agreed that non-UK partners had shown an increased leadership role, 17% disagreed, and 44% reported no change. Still, some respondents highlighted in replies to the open-ended questions how international travel restrictions, which impeded the movement of UK researchers, resulted in an increased reliance on focal country partners to provide support with the implementation of fieldwork, stakeholder engagement, and other project activities. This provided more opportunities for local partners to lead in data collection and analysis and represent the project at public events. A PI for a Hub project affirmed as much, underscoring how their adaptive management approach to uncertainty led to the strengthening of global north–south equities, particularly in terms of empowering early career researchers in partner institutions by providing them with more leadership opportunities:

During the lockdown, we looked closely at our operating structure, looking first at establishing [collectives whereby] colleagues could take the lead in in-country stakeholder engagement. This was not successful, but our follow-on strategy of reorganisation of our six work packages into smaller, more agile research subgroups (16 in total) has been a significant success, revitalised working relationships in the Hub, allowed ECRs to take on leadership roles (as gender-balanced and shared responsibility between global north–global south colleagues as possible) and invigorated an online way of working that otherwise ran the risk of becoming slightly stale with time.

## 5. Discussion

The impacts of the COVID-19 pandemic align with what has been reported in the literature, e.g., [14]. Although our survey focused on the impacts on the project functioning as a system rather than on individuals, survey responses suggest that impacts were

differentiated per categories, e.g., women scientists and early career researchers, as widely reported in the literature, e.g., [46,51]. The main systemic challenge across all the projects investigated was the need for continuous adaptive project management while also handling slow and ambiguous communication between the donor and the funder recipients. It has to be noted however that this was a result of multiple uncertainties, i.e., the evolution of the COVID-19 pandemic in time and across different countries, the different limitations to travel and social gatherings imposed by the governments of the countries where the project partners were located, and the additional cuts to the UK ODA funding, which happened concurrently with the pandemic. Our results can thus represent the disruptions that a cascade of uncertain events may have on international research and development projects. It is also interesting to note that the severity of impacts experienced across the projects included in our study is highly variable. Moreover, the adaptation measures undertaken by the projects (although similar in some cases, e.g., devolving research organization and delivery to focal country partners) succeeded in some cases and failed in others. This serves to emphasise the point that the context in which international research and development projects take place is key, as stressed by other works, e.g., [3]. As for what concerns the north–south partnership, it has to be noted that all but one survey respondent were affiliated with UK research institutes. On the one hand, this limits the reach of the results to a north-driven perspective of the impact of COVID-19 pandemic. On the other hand, as we purposely administrated the survey to the principal investigators, project managers, and capacity development leads, it means that the majority of the Grow and Hub projects (more precisely, at least 60%, i.e., 30 out of 49) were led and managed by global north institutions. This is an extremely interesting result, which seems to suggest that north–south research cooperation is still dominated by the global north despite decades of critical reviews in north–south research partnerships, e.g., [34,52].

## 6. Lessons Learned

In view of the results and their discussion presented in Sections 4 and 5, we conclude the paper by presenting four recommendations that we believe may be useful to donors, policymakers, universities, and research implementing partners working in international research and development.

### 6.1. Devolve Project Management in Order to Enhance Project Resilience and Improve North–South Equities

A key adaptation made by project teams was to devolve some decision-making to in-country teams. As noted above, this shift in project management was particularly important for empowering ECRs in partner countries. While some project teams successfully adapted, the pre-pandemic centralisation of control over research funding and stakeholder engagement hindered the capacity of project teams to respond nimbly to uncertainties caused by COVID-19. Funder requirements regarding cost management militated against the devolution of certain project management functions to south-based teams. Yet, our results suggest that integrating more shared decision-making around research and stakeholder engagement between UK and south-based teams in the design of projects serves to enhance project resilience and north–south equities. As noted above by a Grow PM, building trust with external stakeholders is critical to project success and the sustainability of outcomes; at the same time, the importance of trust-building applies to the management of project teams, and project management structures supporting devolved and shared decision-making can help to advance this goal.

### 6.2. Allocate Resources to Enable North–South Balance in Research Partnerships

Most of the projects included in this study presented a classical north–south research partnership, with theoretical knowledge produced in the global north being applied to case studies in the global south [32,53]. Survey respondents mentioned the limitations of this collaboration model and the ways in which the pandemic exacerbated them, due to a com-

bination of factors. The lack of fieldwork equipment, expertise, and research infrastructure (e.g., reliable internet connectivity) in many ODA countries highlighted current disparities in north–south research status while limitations to international travel underlined how the disconnect between research “theory” and “application” is a huge limiting factor to achieving the desired research impact. Re-imagining future north–south partnerships in research and research capacity-building is vital in enabling more inclusive contributions and ensuring deep and meaningful knowledge exchange in research collaborations. Our results show that there is scope for future multi-stakeholder partnership projects to create the space and resources needed to overcome north–south disparities, for example, through a dedicated budget to reduce the technological divide and create long-lasting expertise and sustainable career paths in south-based research institutions. This may counteract the long-term consequences of COVID-19, such as the loss of human resources in academia, institutions, and NGOs and their expertise with them [53,54].

### *6.3. Rely More on Hybrid and Agile Approaches to Manage the Project Life Cycle*

The development approach selected in the management of the project’s life cycle needs to be tailored to individual project needs, expectations, and constraints. Based on our results, the Grow and Hub project teams that most successfully adapted to uncertainties posed by COVID-19 relied on iterative approaches to managing the scope of projects and the focus of team members. For instance, a PI underscored how reorganising research teams into smaller, more ‘agile’, sub-groups enhanced project effectiveness. By adjusting the project’s scope, another PI pointed to the significant impact they were able to achieve in countering COVID-19. Given that the main deliverable of university-led research projects—multi-stakeholder or otherwise—is commonly academic publications, there is a limit to the extent to which project scope can be adjusted from the original plan. However, ODA-funded multi-stakeholder partnership projects also contain scope for individual and institutional capacity-strengthening, policy engagement, and improving international development practice. Therefore, for large multi-stakeholder projects such as these, different project phases will benefit from iterative development approaches being at their core. A hybrid approach to managing the project life cycle will enhance project resilience while reducing the overall risk to projects posed by uncertainties.

### *6.4. Improve Resource Flexibility, Transparency, and Communication through Enhanced Funder–Implementer Collaboration*

Numerous study participants cited resource inflexibility and the lack of (or vagueness in) communication from the funder as exacerbating the uncertainties caused by COVID-19. The UK ODA cuts—although outside the GCRF’s control—added another challenge to project cost management, further evidencing the importance of resource flexibility, transparency and communication. Multiple respondents in our study cited long, unexplained delays in communication from funders, possibly suggesting that risk management processes at funder level needed to be improved. In fact, issues with GCRF management of ODA funds were raised well before COVID-19 in a report by the UK Independent Commission on Aid Impact [55]. This report singled out the lack of strategic direction, especially regarding achieving development impact and structure in capacity-building approaches in the global south. We suggest that resource flexibility, transparency, and communication can be improved through increased collaboration between funders and project implementers. A more collaborative approach enhances the scope for co-learning, which would have likely better positioned both the funder and project teams to adapt to resource uncertainties triggered by COVID-19 and exacerbated by the ODA cuts.

## **7. Conclusions**

This paper presents the experiences and lessons shared among international GCRF research and development projects responding to COVID-19 restrictions. At the time of writing, the GCRF Grow projects had recently finished and the Hub projects were coming

to a close; their ability to adapt to changing circumstances had already been tested in various ways by the time the pandemic became a global crisis. Reflecting on their flexibility and responsiveness to change represents a unique testing ground to learn from how international research and development has been structured to date, identify weaknesses exposed by the unprecedented COVID-19 crisis, and highlight the effectiveness of adaptive management approaches that were employed during this time. While global uncertainties, such as those presented by COVID-19, might lead some to question the viability of the international multi-level stakeholder partnership project model, we maintain that this model remains important, particularly in view of improving equities in global north–south relationships and achieving the UN sustainable development goals. This paper offers evidence-based suggestions to adaptively manage projects when confronted with uncertainty. We believe these recommendations will be useful to funders, universities and their implementing partners, and policymakers supporting the use of ODA funds for social–ecological system research, particularly given that uncertainties (COVID-19 related or otherwise) will always emerge and must be adaptively managed. Although these lessons may not be novel, see, e.g., [3,4,34], they add to the urgency of reforming the north–south partnership model in international development research from its concept to its delivery and implementation.

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**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical restrictions.

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## Appendix A. GCRF projects surveyed in this work

**Table A1.** GCRF Grow and Hub projects represented in the paper. At least one member from each project (1–31) participated in the survey and there was a total of 41 participants. The authors represent projects 1–7. [Sources: UKRI-GCRF database (<https://gtr.ukri.org> accessed on 20 June 2022) and individual project websites (as indicated in the last column, accessed on 20 June 2022)].

Id	Project Acronym	Project Name	Partner Nr.	Focal Countries	Website
1	AFRICAP	Agricultural and Food System Resilience: Increasing Capacity and Advising Policy	11	UK, Malawi, South Africa, Tanzania and Zambia	<a href="https://africap.info/">https://africap.info/</a> accessed on 20 June 2022
2	Blue Communities	Building capacity for sustainable interactions with marine ecosystems for the benefit of the health, well-being, food security, and livelihoods of coastal communities in East and Southeast Asia.	10	UK, Indonesia, Philippines, Vietnam and Malaysia	<a href="https://www.blue-communities.org/Home">https://www.blue-communities.org/Home</a> accessed on 20 June 2022
3	BRECCIA	Building Research Capacity for Sustainable Water and Food Security in sub-Saharan Africa	15	UK, Malawi, Ghana, Kenya	<a href="http://www.gcrf-breccia.com/">http://www.gcrf-breccia.com/</a> accessed on 20 June 2022
4	HORN	One Health Regional Network for the Horn of Africa	11	UK, Kenya, Ethiopia, Eritrea, Somalia, and Djibouti	<a href="https://onehealthhorn.net/">https://onehealthhorn.net/</a> accessed on 20 June 2022
5	RECAP	Research capacity strengthening and knowledge generation to support preparedness and response to humanitarian crises and epidemics.	10	UK, Lebanon, Sierra Leone	<a href="https://www.lshtm.ac.uk/research/centres-projects-groups/recap#welcome">https://www.lshtm.ac.uk/research/centres-projects-groups/recap#welcome</a> accessed on 20 June 2022
6	SAFEWATER	A transdisciplinary research centre working to deliver clean drinking water in underdeveloped regions	5	UK, Brazil, Colombia and Mexico	<a href="https://www.safewater-research.com/">https://www.safewater-research.com/</a> accessed on 20 June 2022
7	SENTINEL	Social and Environmental Trade-Offs in African Agriculture	10	UK, Ethiopia, Ghana and Zambia	<a href="https://www.sentinel-gcrf.org/">https://www.sentinel-gcrf.org/</a> accessed on 20 June 2022
8	ARISE hub	Accountability for Informal Urban Equity Hub	11	UK, Bangladesh, India, Kenya, Sierra Leone	<a href="https://www.ariseconsortium.org/">https://www.ariseconsortium.org/</a> accessed on 20 June 2022
9	CAPABLE	Cambridge Alliance to Protect Bangladesh from Long-term Environmental Hazards	11	UK, Bangladesh	



Table A1. Cont.

Id	Project Acronym	Project Name	Partner Nr.	Focal Countries	Website
10	CEPHaS	Strengthening Capacity in Environmental Physics, Hydrology, and Statistics for Conservation Agriculture Research	8	UK, Zimbabwe, Zambia and Malawi	<a href="https://www.lstmed.ac.uk/research/centres-and-units/capacity-research-unit-cru/our-projects/gcrf-strengthening-capacity-in">https://www.lstmed.ac.uk/research/centres-and-units/capacity-research-unit-cru/our-projects/gcrf-strengthening-capacity-in</a> accessed on 20 June 2022
11	GCRF-COMPASS	Capacity-building in Eastern Neighbourhood and Central Asia: research integration, impact governance and sustainable communities	20	UK, Azerbaijan, Belarus, Tajikistan and Uzbekistan	
12	DCP	DCP: Development Corridors Partnership	24	Eastern Africa	<a href="https://developmentcorridors.org/">https://developmentcorridors.org/</a> accessed on 20 June 2022
13	Drugs and disorder	Drugs and (dis)order: Building sustainable peacetime economies in the aftermath of war	13	Afghanistan, Colombia and Myanmar	<a href="https://drugs-and-disorder.org/">https://drugs-and-disorder.org/</a> accessed on 20 June 2022
14	Biopharma	Establishment of biopharmaceutical and animal vaccine production capacity in Thailand and neighbouring Southeast Asian countries	18	Thailand and other Southeast Asian countries	<a href="https://research.kent.ac.uk/gcrfbiopharma/">https://research.kent.ac.uk/gcrfbiopharma/</a> accessed on 20 June 2022
15	FutureDAMS	FutureDAMS: Design and assessment of resilient and sustainable interventions in water–energy–food mega-system environments	14	Myanmar/South Asia, Ghana/sub-Saharan Africa, Jordan/Middle East	<a href="https://www.futuredams.org/">https://www.futuredams.org/</a> accessed on 20 June 2022
16	GNNTD	Global Network for Neglected Tropical Diseases	14	UK, South America, Asia	<a href="https://ntd-network.org/">https://ntd-network.org/</a> accessed on 20 June 2022
17	KNOW	Knowledge in Action for Urban Equality	20	Perú, Colombia, Costa Rica, Cuba, Tanzania, Uganda, Sierra Leona, India, and Sri Lanka	<a href="https://www.urban-know.com/">https://www.urban-know.com/</a> accessed on 20 June 2022
18	Living Deltas Hub	Living Deltas Hub	24	Bangladesh, India, Vietnam	<a href="https://livingdeltas.org/">https://livingdeltas.org/</a> accessed on 20 June 2022
19	None in Three (Ni3)	A Centre for the Development, Application, Research and Evaluation of Prosocial Games for the Prevention of Gender-based Violence	12	UK, India, Jamaica, Uganda	<a href="https://www.noneinthree.org">https://www.noneinthree.org</a> accessed on 20 June 2022

Table A1. Cont.

Id	Project Acronym	Project Name	Partner Nr.	Focal Countries	Website
20	One Health Poultry Hub	One Health Poultry Hub	40	Bangladesh, India, Sri Lanka and Vietnam	<a href="https://www.onehealthpoultry.org/">https://www.onehealthpoultry.org/</a> accessed on 20 June 2022
21	One Ocean Hub	One Ocean Hub	40	South Africa, Namibia, Ghana, Fiji and the Solomon Islands	<a href="https://oneoceanhub.org/">https://oneoceanhub.org/</a> accessed on 20 June 2022
22	ORNATE India	Increasing eye research capacity and capabilities to tackle the burden of blindness in India: a research-based UK–India Collaboration	3	India	
23	PIIVeC	Partnership for Increasing the Impact of Vector Control	6	Burkina Faso, Cameroon, and Malawi	<a href="https://www.piivec.org/">https://www.piivec.org/</a> accessed on 20 June 2022
24	PEAK Urban	Sustainable urbanisation	5	India, China, Colombia	<a href="https://www.peak-urban.org/">https://www.peak-urban.org/</a> accessed on 20 June 2022
25	PRECISE	The PRECISE (PREgnancy Care Integrating translational Science, Everywhere) Network: a sub-Saharan network for placental disorders	14	Gambia, Senegal, Kenya; Mozambique	<a href="https://precisenetwork.org/">https://precisenetwork.org/</a> accessed on 20 June 2022
26	RECIRCULATE	RECIRCULATE: Driving eco-innovation in Africa: capacity-building for a safe circular water economy	8	Ghana, Kenya, Malawi, Tanzania and Ethiopia, Botswana, Zambia, Nigeria	<a href="http://www.recirculate.global/">http://www.recirculate.global/</a> accessed on 20 June 2022
27	South Asian Nitrogen Hub	South Asian Nitrogen Hub	19	Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan, Sri Lanka	<a href="https://sanh.inms.international/">https://sanh.inms.international/</a> accessed on 20 June 2022
28	STRiDE	Socio-technical resilience in software development	4	UK	<a href="https://stride.org.uk/">https://stride.org.uk/</a> accessed on 20 June 2022
29	Thanzi la Onse (Health of All)	Frameworks and analysis to ensure value for money health care—developing theory, changing practice	7	Malawi, Uganda, and Southern and East Africa	<a href="https://thanzi.org/">https://thanzi.org/</a> accessed on 20 June 2022
30	TIGR2ESS	Transforming India’s Green Revolution by Research and Empowerment for Sustainable food Supplies	31	India	<a href="https://tigr2ess.globalfood.cam.ac.uk/">https://tigr2ess.globalfood.cam.ac.uk/</a> accessed on 20 June 2022
31	TRADE Hub	Trade, Development and the Environment Hub	41	Brazil, Central Africa, China, Indonesia, Tanzania	<a href="https://tradedhub.earth/">https://tradedhub.earth/</a> accessed on 20 June 2022

## Appendix B. Reflective Essays by the Authorship Team and Online Survey

The authorship team was made up of researchers, project managers, and principal investigators drawn from seven GCRF Grow and Hub projects. The team was formed through self-selected, with individuals expressing their interest in sharing their experiences and insights from working on international research projects during the COVID-19 pandemic. To determine the focus of the paper, the team agreed that conducting a reflective exercise at the beginning would be beneficial. Each co-author, with input from colleagues on the same project, reflected on the impacts of the pandemic, travel restrictions on project activities, how they were managed at the time, the key challenges and opportunities that emerged, and any positive or negative outcomes. These were written down and discussed by the team, which then informed the next stage of research. An online survey was conducted to gather evidence from the wider GCRF Grow and Hub cohort.

The survey was designed and administered online using Google Forms. It included open- and closed-ended (multiple choice and linear scale) questions (Table A2). The survey was designed to capture project-level impacts and was sent to the principal investigators, project managers, and capacity development leads—people who had a good overview of the GCRF Grow and Hub project. The authorship team, along with colleagues on the GCRF Grow and Hub projects they were involved in, conducted an initial scoping of the main impacts on project activities, which then informed the development of the survey questions. The survey was pre-tested on five colleagues from different projects to ensure it had a logical flow and the questions were relevant and easy to understand. The feedback received helped to make the language and structure clearer.

When the survey was ready, an email was sent to all GCRF Grow and Hub projects, with details of the study and an invitation to complete the survey by clicking on a link, which took participants to the “Impact of COVID-19 pandemic on GCRF Grow and Hub activities” Google Form. The first email was followed by two reminders, spaced apart by two weeks, which encouraged more responses. A clear deadline for responses was given and participants were given the option to opt out of the study within a month of submitting their responses in case they changed their minds. A copy of their responses was sent to the email address they provided.

**Table A2.** Survey questions.

Nr.	Questions	Type of Question	Answer Responses
<b>Section 1: Consent text</b>			
1	Please enter your name	Free text	
2	Which country are you based in?	Drop-down list	Country list
3	Which GCRF cohort is your project part of?	Multiple choice	GCRF GROW; GCRF Hub; Other
4	Name of project	Free text	Short answer text
5	Which countries is your project active in?	Drop-down list	Short answer text
6	What position do you hold on your project?	Multiple choice	Principal investigator; Project manager; Capacity development lead; Other
<b>Section 2: Impact of COVID-19 pandemic on project activities</b>			
7	At what stage in your project did the COVID-19 pandemic occur?	Multiple choice	Beginning (first year); Mid; End (final year)
8	What level of disruption has your project experienced due to the COVID-19 pandemic?	Linear scale	No disruption—significant disruption (scale 0–5)

Table A2. *Cont.*

Nr.	Questions	Type of Question	Answer Responses
9	Has your project experienced any of the following impacts due to the COVID-19 pandemic?	Multiple choice grid with 0–5 scale (None; Minimal; Minor; Moderate; Significant; Very significant)	Decreased amount of fieldwork; delayed fieldwork (now or soon-to-be resumed); cancelled fieldwork; decreased number of capacity development activities for project staff; delayed capacity development activities for project staff (now or soon-to-be resumed); canceled capacity development activities for project staff (e.g., secondments, research skills training, conferences); conversion of research/engagement/capacity development activities to online formats; decreased staff engagement on project, owing to changing working patterns/styles; decreased engagement with stakeholders; decreased interdisciplinary working; decreased productivity due to impacts on mental health and well-being; increased dependence on non-UK partner organisations; increased workload for the wider project team (e.g., heightened risk management)
10	What level of disruption to expected outputs has your project experienced so far?	Linear scale	No disruption—Significant disruption (scale 0–5)
11	Please give a short explanation about any impacts on publication outputs, e.g., have there been fewer, more, different outputs as a result of the pandemic, or the same as expected?	Free text	Short answer text
12	Has your project experienced any negative impacts not previously mentioned? If yes, please give a short explanation here (several points can be included).	Free text	Long answer text
13	Has the COVID-19 pandemic presented your project with any unique opportunities? If yes, please explain further here.	Free text	Long answer text
14	Has your project experienced any of the following opportunities/benefits?	Multiple choice grid with 1–7 scale (Strongly Disagree; Disagree; Somewhat Disagree; Neither Agree nor Disagree; Somewhat Agree; Agree; Strongly Agree)	Greater inclusion in meetings/workshops due to increased online delivery; digital communication skills enhanced across teams; increased engagement between partners in non-UK countries; partners in non-UK countries taking the lead more with research and capacity development activities; budgetary savings; heightened awareness of and discussion about equitability (e.g., the ability to work from home, resource allocation, internet connectivity, power outages); the crisis prompted more creative thinking; new research opportunities focusing on COVID-19

Table A2. Cont.

Nr.	Questions	Type of Question	Answer Responses
15	Has your project experienced any opportunities/benefits not previously mentioned? If yes, please give a short explanation here (several points can be included).	Free text	Long answer text
16	In what ways were you able to adapt your research and/or capacity development activities in response to the COVID-19 pandemic?	Free text	Long answer text
17	In hindsight, what could have been done differently to the project design to reduce or lessen the impacts of the COVID-19 pandemic on the project objectives/outputs?	Free text	Long answer text
18	Is there anything the funder (UKRI) could do to support projects more effectively in the future during similar circumstances?	Free text	Long answer text
19	Any additional information about impacts of the COVID-19 pandemic on project activities not already captured?	Free text	Short answer text
20	Would you be interested in contributing to a follow-up publication and responding to a further survey/interview?	Multiple choice	Yes or No
21	If you have any comments on the survey or additional details that you would like considered, please add them here:	Free text	Short answer text

### Section 3: Closing text

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