

## **Reporting on Use of Global Challenges Research Funding 2017-18 University of Glasgow**

### ***Institutional research context***

The University of Glasgow (UoG) is a leader in international development research, with strong interdisciplinary connectivity and a long track record of equitable partnership with LMIC partners to address challenges facing the world's poorest communities. An audit conducted in 2014-15 of funding for international development research being undertaken in Scottish HEIs showed Glasgow held 40% of all funding in this sector, evidence of our long-standing strength in international development research, and this strength continues to be manifest with the UoG currently sitting 7<sup>th</sup> in the ranked list of GCRF award holding HEIs. The Glasgow Centre for International Development reflects the breadth and depth of the international development research community at Glasgow with more than 400 research affiliates. The inclusion of International Development as a theme in the new £110 million Research Hub development, and the identification of One Health and Reducing Inequalities as Research Beacons highlight the strategic importance of ODA activity to Glasgow. The request to submit a 3-year strategic plan provided a useful opportunity to articulate our on-going vision for development research across the university. We also took the opportunity to reinforce our commitment to use this funding to make a difference on the ground, and are orienting increasing numbers of our staff to research partnerships within LMIC contexts (rather than spend on administration and on-campus research support). In this way, we hope to continue to build and develop the partnerships that have made us so successful in this sector and deliver impact for communities in developing countries.

### ***Funding received and disbursed***

The University of Glasgow received £743,813 from the Scottish Funding Council's GCRF allocation for 2017-18. The funds were awarded to 24 projects selected through open competition (31% success rate) that developed nascent initiatives, created new partnerships with potential to develop into broader platforms, and developed new research projects in collaboration with Development Assistance Committee (DAC) list partners. The selection process was led by our GCRF Coordination Group (comprised of sixteen members of staff equally distributed across our four Colleges and two central administrative staff members), who considered interdisciplinarity, capacity strengthening, ODA compliance, strategic fit, and quality of research conducted or likely to emerge from the funded activity when selecting successful applications. Funded activities commenced in October 2017. All projects were funded at 80% FEC and existing core-funded staff were not eligible for salary buy-out. No SFC Newton or other funding sources were used to support these activities, so those columns have been omitted, but have added column for partners, start and end dates and the OECD sector classification as per SFC request.

Project Purpose and Outcomes	DAC Nation(s)	Partner Organizations	Start Date - End Date	Sector - OECD Classification	SFC GCRF (£)
<p><b>Sustainable fisheries management in the Egyptian Red Sea</b></p> <p><i>Purpose:</i> To develop baseline data on reef health for fisheries management and use local perceptions of management practices to inform fisheries management policy</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Creation of baseline ecological data on reef health</li> <li>• Perceptions of local fishers to management measures identified</li> <li>• Two female Egyptian field research trained in camera equipment design and methodology</li> </ul>	Egypt	Egyptian Environmental Affairs Agency Hurgada Environmental Protection and Conservation Association Suez Canal University	01/12/2017 - 31/03/2018	313 – Fishing sector policy, planning and programmes; institution capacity building and advice; ocean and coastal fishing; marine and freshwater fish surveys and prospecting	£45,284.69
<p><b>Collaborative Digital Innovation for Growth and Inclusiveness</b></p> <p><i>Purpose:</i> To develop and extend understanding of the use of digital innovations for healthcare in developing countries and co-develop future research</p> <p><i>Outcomes</i></p> <ul style="list-style-type: none"> <li>• Workshops with 28 participants on inclusive innovations and growth</li> <li>• Development meetings with 9 major health-related stakeholders (government and NGO)</li> <li>• Creation of research network and co-</li> </ul>	Nepal Egypt Bangladesh Indonesia Sri Lanka India Malaysia	Telkom University Universiti Sains Malaysia Dhulikhel Hospital Kathmandu University Hospital Public Health Foundation of India Tata group Indonesian Telkom International Centre for Diarrhoeal Disease Research Institute for Research & Development	16/10/2017 – 31/03/2018	121 - Health sector policy, planning and programmes; aid to health ministries, public health administration	£49,021.13

development of a Newton application (outcome pending)					
<p><b>Multidisciplinary investigation of the socio-environmental impacts of non-regulated gold mining (NRGM) on communities in Chocó, Colombia.</b></p> <p><i>Purpose:</i> strengthen existing links with local partners in order to help develop community led socio environmental rehabilitation strategies.</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• One-to-one interviews and meetings with local community members and organisations</li> <li>• Reciprocal visits of researchers and stakeholders between Colombia and Glasgow</li> <li>• Submission of a Newton-Colciencias Research Partnership grant (outcome: successful)</li> </ul>	Colombia	ABColumbia Universidad Tecnológica del Chocó Diego Luis Córdoba Tierra Digna WWF Columbia	01/10/2017 – 31/03/2018	151 - Support to the exercise of democracy and diverse forms of participation of citizens beyond elections	£49,874.07
<p><b>Multiplexed Sentinel Paper DNA Sensors</b></p> <p><i>Purpose:</i> To develop a multiplexed assay for malaria and schistosomiasis from a single drop of blood</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Establishment of new partnerships in Uganda</li> <li>• Capacity strengthening in Rwanda and Tanzania</li> <li>• Assay developed and trialled in Uganda</li> </ul>	Uganda	Makerere University Ministry of Health, Uganda	01/10/2017 – 31/03/2018	122 – Infectious disease control	£34,479.51

<ul style="list-style-type: none"> <li>Royal Society Global Challenges application developed and submitted to support widespread implementation in Uganda and Tanzania (outcome: pending)</li> </ul>					
<p><b>One health approaches reducing the impact of drought on human and animal health in semi-arid areas of Tanzania</b></p> <p><i>Purpose:</i> To develop research partnerships for future research on drought impacts in Tanzania and collect preliminary data on local perceptions of drought</p> <p><i>Outputs:</i></p> <ul style="list-style-type: none"> <li>Establishment of new partnerships, particularly with researchers at the University of Dar es Salaam to study drought-related issues in Tanzania</li> </ul>	Tanzania		01/02/2018 – 31/03/2018	740 – Disaster risk reduction strategies	£5,006.22
<p><b>Visualising Geoviolence in Malawi</b></p> <p><i>Purpose:</i> Analyse environmental change and assess the usefulness of this data for understanding human/environmental relations</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>Workshop for 20 UG students at LUANAR and provision of open access software</li> <li>Co-produced StoryMap</li> <li>Sharesite for the interview transcripts, video and sound footage, and drone-based modelling produced</li> <li>A grant application, (with Dr Boyson Moyo), submitted to the Academy of</li> </ul>	Malawi	Lilongwe University of Agriculture and Natural Resources, Malawi ABUNDANCE NGO	01/11/2017 – 31/03/2018	920 – Measures to promote and protect the safety, well-being, dignity and integrity of civilians and those no longer taking part in hostilities	£43,931.27

<p>Medical Sciences GCRF Networking Grant (Outcome: pending)</p> <ul style="list-style-type: none"> <li>Grant application prepared for the Royal Society Global Challenges Research Fund Resilient Futures Challenge-led Scheme (submission pending)</li> </ul>					
<p><b>The Use of Mobile Text Messaging to Increase Participation in Canine Rabies Vaccination Campaigns</b></p> <p><i>Purpose:</i> To test the use of locally-relevant text messaging and religious leaders involvement in effectiveness of rabies elimination campaigns</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>Trained 87 field officers in delivery of mass vaccination</li> <li>Increase of ~10% in vaccination campaign participation in villages receiving interventions, as compared to controls</li> <li>Overall increase in rabies vaccination campaign coverage compared to previous 2 years</li> </ul>	Tanzania	<p>Ifakara Health Institute Ministry of Health, Community Development, Gender, Elderly and Children Ministry of Agriculture, Livestock and Fisheries One Health Coordination Unit</p>	<p>01/10/2017 – 31/03/2018</p>	122 - public health and awareness campaigns	£45,178.03
<p><b>Workshop in Rwanda</b></p> <p><i>Purpose:</i> To identify new areas of collaboration and co-develop research questions for future work</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>Identified areas of collaboration between UofG and UofRwanda</li> <li>Inclusion of joint work package on</li> </ul>	Rwanda	University of Rwanda	<p>01/11/2018 – 31/03/2018</p>	410 - Including natural reserves and actions in the surrounding areas	£23,065.38

<p>environmentally-driven pathogens in Rwanda a GCRF Hub bid (outcome: pending)</p> <ul style="list-style-type: none"> <li>• Key area of collaboration on trans-national conservation corridors identified</li> </ul>					
<p><b>Tanzania-Malawi-Glasgow network</b>  <i>Purpose:</i> To develop connectivity between Malawian, Tanzanian and UK clinicians  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Connected NTD researchers from Kilimanjaro Clinical Research Institute/Kilimanjaro Christian Medical Centre with research teams at Malawi College of Medicine</li> <li>• Ongoing development of joint health-related research plans</li> </ul>	Malawi Tanzania	University of Malawi Kilimanjaro Clinical Research Centre	01/11/2017 – 31/03/2018	121 - General medical research (excluding basic health research)	£26,370.51
<p><b>Inequality in access to education at different stages of development: Scoping study of empirical and normative aspects</b>  <i>Purpose:</i> To map inequality in education and identify principles that drive access policies  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• www.caie.org.uk</li> <li>• Stakeholder map</li> <li>• Four national briefing papers</li> <li>• Submitted ESRC GCRF grant application (outcome: pending)</li> </ul>	Chile Malawi Swaziland	University of Malawi University of Swaziland Alberto Hurtado University	01/10/2017 – 31/03/2018	111 - Education sector policy, planning and programmes; aid to education ministries, administration and management systems; unspecified education activities	£39,163.36
<p><b>An integrated energy system for co-generation of electricity and heat for drying agricultural products</b></p>	Kenya Malawi	Moi University Abundance Renew'N'AbleMalawi	15/10/2017 – 31/03/2018	231 - Including general inventories,	£31,249.10

<p>Purpose: To obtain data on energy problems affecting rural inhabitants and the impacts of fuel poverty on social and economic welfare as the basis for co-development of new systems</p> <p>Outcomes</p> <ul style="list-style-type: none"> <li>• Undergraduate students in the countries of focus (~40) received training and carried out surveys in 22 regions across both countries</li> <li>• Economic aspects of fuel poverty quantified for both countries</li> <li>• Characterisation of social aspects of fuel poverty for both countries completed</li> <li>• GCRF application to BBSRC submitted to continue co-development of solutions (outcome: pending)</li> </ul>				surveys	
<p><b>Exploring the feasibility of cross-sectoral data linkage to study the social determinants of health in India</b></p> <p><i>Purpose:</i> Audit available data sources on social determinants of health and develop partnerships to further interrogate</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Audit conducted, challenges to data linkages and potential solutions identified</li> <li>• Stakeholder meetings and establishment of questionnaire to identify key priorities for future data use to improve health outcomes</li> </ul>	India	Jawaharlal University University of Bahia Public Health Foundation of India	01.102017 – 03/31/2018	121 - Health sector policy, planning and programmes; aid to health ministries, public health administration	£18,236.20

<p><b>Building up trial research hubs in Uganda and Nigeria for Sustainable Futures in Africa.</b>  <i>Purpose:</i> To further develop research and administrative capacity of the Sustainable Futures in Africa network, a collaborative network of researchers from Botswana, Nigeria, Uganda, Nigeria and Scotland  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Creation of African Research Hubs in Nigeria, Botswana and Uganda</li> <li>• Grant writing workshop for approximately 25 members of the network</li> <li>• ITN proposal for 15 studentships submitted to the European Commission (outcome: unsuccessful)</li> </ul>	<p>Nigeria  Uganda  Botswana  Malawi</p>	<p>Makerere University  Obafemi Awolowo University  Apala Widows and Orphanage Centre  Women’s Environmental Programme</p>	<p>01/11/2017  –  31/03/2018</p>	<p>410 - Environmental and land use planning and decision-making procedures; seminars, meetings; miscellaneous conservation and protection measures not specified below</p>	<p>£42,756.69</p>
<p><b>Citizen Science for Health Surveillance in Failed Sates – Venezuela</b>  <i>Purpose:</i> To provide proof of principle for citizen science approaches to disease surveillance in Venezuela  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Increased capacity for citizen science data collection via <a href="http://www.chipo.chagas.ucv.ve">www.chipo.chagas.ucv.ve</a></li> <li>• Individualized data on malaria, Chagas, leishmania and arboviruses compiled for Venezuela</li> </ul>	<p>Venezuela</p>	<p>Pontificia Universidad Catolica del Ecuador (PUCE)</p>	<p>20/10/2017  –  31/03/2018</p>	<p>122 - public health and awareness campaigns</p>	<p>£51,158.13</p>
<p><b>Social Accountability for Sustainable Domestic Water in Dar es Salaam</b></p>	<p>Tanzania</p>	<p>University of Dar es Salaam  Shahidi wa Maji</p>	<p>16/10/2017  –</p>	<p>151 - Support to the exercise of</p>	<p>£47,424.79</p>



<p><i>Purpose:</i> Identify how local behaviour, motivations and cultural and institutional constraints affect community-based efforts to develop water governance institutions</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Conducted 2154 interviews with citizens and sampled water quality at 45 sampling points</li> <li>• Trained one student and one lecturer at the University of Dar es Salaam in interview techniques</li> </ul>		Water Witness International	31/03/2018	democracy and diverse forms of participation of citizens beyond elections	
<p><b>Cultural practices and the arts in socio-ecological sustainability research</b></p> <p><i>Purpose:</i> To explore potential for arts and cultural practices to increase effectiveness of community engagement for environmental sustainability</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Three pilot projects incorporating the arts in environmental sustainability engagement</li> <li>• Inclusions of Arts-based partners into the Sustainable Futures in Africa Network</li> </ul>	Malawi Nigeria Uganda		15/10/2017 – 31/03/2018	410 - Environmental and land use planning and decision-making procedures; seminars, meetings; miscellaneous conservation and protection measures not specified	£32,006.17
<p><b>Towards a modern biodiversity monitoring pipeline in Tanzania: Automated machine learning techniques for processing wildlife image data</b></p> <p><i>Purpose:</i> To develop learning algorithms for processing wildlife data and deliver training on machine learning to wildlife researchers</p>	Tanzania	Nelson Mandela African Institute of Science and Technology Tanzania Wildlife Research Institute (TAWIRI)	01/11/2017 – 31/03/2018	410 - Including natural reserves and actions in the surrounding areas	£21,545.58

<p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Successful new algorithms for wildlife census data analysis created – will enable faster and more accurate counting, with significantly reduced manual labour</li> <li>• Training of approximately 40 Tanzanian students, lecturers, conservation professionals, software developers and researchers on machine learning</li> </ul>					
<p><b>River channel change in the Philippines</b>  <b>Purpose: Quantify river channel change in the Philippines and develop partnerships to address river and flood risk management</b>  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Ground trothed remotely-sensed images of river channel change</li> <li>• Co-Development of NERC-Newton grant application (outcome: pending)</li> </ul>	Philippines	University of the Philippines	16/10/2017 – 31/03/2018	410 - Floods from rivers or the sea	£32,047.64
<p><b>Criminogenic Collectables: an Object-Centred approach to studying the trafficking of rare illicit commodities</b>  <i>Purpose:</i> Develop understanding of illicit trafficking of collectable wildlife, fossils and antiquities from DAC list countries  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Successful trial of new methodology for tracking illicit commodities</li> <li>• Submission of €1.5 million ERC (outcome: successful)</li> </ul>	Fiji South Africa	University of Cape Town University of the South Pacific Victoria University of Wellington	20/10/2017 – 31/03/2018	Unknown	£41,250.08

<p><b>Machine learning training for disease vector surveillance</b>  <i>Purpose:</i> Training colleagues at the Ifakara Health Institute (IHI) and the Institut de Recherche sur le Sciences en la Sante' (IRSS) on machine learning analysis for use in malaria mosquito epidemiological trait identification  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• 6 students trained in machine learning for MIR spectra analysis of mosquito traits</li> <li>• 2 selected trainees received additional intensive training at Glasgow</li> </ul>	Tanzania Burkina Faso	Ifakara Health Institute Institut de Recherche en Sciences de la Santé	01/01/2018 – 30/09/2018	122 - Prevention and control of malaria	£14, 305.97
<p><b>Introducing the Sustainable Futures in Africa Network So Far: A Short Film</b>  <i>Purpose:</i> To produce a short film introducing and explaining the work of the Sustainable Futures in Africa Network  <i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Short film produced by Malawian arts collaborator in the SFA Network</li> </ul>	Botswana Malawi Uganda Nigeria	Art House Africa	05/02/2018 – 31/07/2018	410 - Environmental and land use planning and decision-making procedures; seminars, meetings; miscellaneous conservation and protection measures not specified	£2,000.00
<p><b>Children's Literature and International Safe Spaces: Toolkit development for third sector partners working with displaced children</b>  <i>Purpose:</i> To development the use of children's literature as a way to engage with displaced</p>	Egypt Mexico	International Board on Books for Young People Ministry of Culture, Mexico United Nations High Commissioner for Refugees	01/12/2017 – 31/03/2018	920 – Measures to promote and protect the safety, well-being, dignity and integrity of	£14,156.55

<p>children</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Curation of culturally appropriate picturebooks for different groups</li> <li>• Training of 49 staff from libraries, NGOs and cultural centres on techniques for engaging with displaced children</li> </ul>		Sala de Lectura Acordes Cotidianos		civilians and those no longer taking part in hostilities	
<p><b>Rabies Stakeholder Engagement Workshops</b></p> <p><i>Purpose:</i> To improve community engagement in rabies elimination campaigns</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Stakeholder meeting with ~ 50 people to gather feedback on impact of mass dog vaccinations in 2 districts and plan expansion across 6 additional districts</li> <li>• Trained health workers from 8 districts in new PEP protocol</li> <li>• Ongoing WhatsApp group providing ongoing assistance and gathering additional feedback</li> </ul>	Tanzania	Ifakara Health Institute Nelson Mandela African Institute of Science and Technology Sokoine University of Agriculture Ministry of Agriculture, Livestock and Fisheries, Tanzania One Health Unit WHO Country Office	30/09/2017 – 30/06/2018	122 - public health and awareness campaigns	£18,467.23
<p><b>Stakeholder Engagement for Vietnam Aquaculture Disease Threats</b></p> <p><i>Purpose:</i> Develop a One Health approach to South-east Asian group B streptococcus disease in public health and aquaculture</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> <li>• Two workshops with 17 people from 15 organisations in 7 countries</li> <li>• Report summarizing data and datagaps in GBS surveillance in public health and</li> </ul>	Lao PDR Cambodia Vietnam Malaysia Thailand		30/09/2017 – 30/06/2018	313 - Pilot fish culture; marine/freshwater biological research.	£2,762.51

aquaculture in Southeast Asia and plan of action for future work.					
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## **Narrative**

The initiatives funded by the SFC GCRF allocation are geographically broad, with funded activity in Asia, South America, the Middle East and Africa. Consistent with our current activity, a large portion of this funding supported projects in east Africa, particularly Tanzania, Rwanda, Malawi and Uganda. This reflects the strength of our research collaborations in this area, our understanding of local challenges and our ability to address them, and our strategy to further develop our partnerships in the region.

As can be seen in the table above, our projects strengthened capacity across student and researcher communities in multiple countries, in keeping with our commitment to skills development for DAC list and UK researchers. From technical skills (use of underwater camera surveying skills) to intervention management (delivery of mass vaccination campaigns) to research techniques (survey delivery), our portfolio of funded projects resulted in wide scale capacity strengthening across multiple disciplines. This capacity strengthening was accomplished in the context of innovative and world-leading research. From new methodologies in community engagement to development of new diagnostic tools for disease to new knowledge of illicit activities and economies, our work offers concrete steps to improved livelihoods for the world's poorest people.

This table highlights two different kinds of successful outcomes from the many successful projects in the complete table above: a measurable increase in rabies campaign coverage through the use of mobile technologies and targeted messaging, and follow-on funding success for community empowerment in Colombia. Both of these types of successes (directly attributable impact and successful funding applications for ongoing work) show how we are leveraging our allocated funding into impact on the ground and foundations for future activity.

<p><b>The Use of Mobile Text Messaging to Increase Participation in Canine Rabies Vaccination Campaigns</b></p> <ul style="list-style-type: none"><li>• Trained 87 field officers in delivery of mass vaccination</li><li>• Increase of ~10% in vaccination campaign participation in villages receiving interventions, as compared to controls</li><li>• Overall increase in rabies vaccination campaign coverage compared to previous 2 years</li></ul>	<p><b>Multidisciplinary investigation of the socio-environmental impacts of non-regulated gold mining (NRGM) on communities in Chocó, Colombia.</b></p> <ul style="list-style-type: none"><li>• One-to-one interviews and meetings with local community members and organisations</li><li>• Reciprocal visits of researchers and stakeholders between Colombia and Glasgow</li><li>• Submission of a Newton-Colciencias Research Partnership grant (outcome: successful)</li></ul>
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A central feature of our 3-year strategic plan for allocated funding is partnership development. This approach also applied to our 2017-18 allocation, where we encouraged applications including and led by researchers new to GCRF and DAC list country research. We prioritized interdisciplinary teams of researchers and encouraged the development of new relationships both across University of Glasgow disciplines, but also between our research teams and those in DAC list countries. This focus on partnerships and interdisciplinarity is part of our strategy to develop teams that can address complex challenges and are resilient to the setbacks that are an inevitable part of development research. As can be seen in the table of funded projects, eight of our funded projects developed their teams to the point where large-scale funding proposals were feasible and, of the three outcomes known, two were successful.

Our funded projects highlight the breadth of the University of Glasgow's strength in international development, bringing to bear a wide range of expertise and experience. Our portfolio demonstrates several key research areas that we continue to develop; One Health, Global Security and Illicit Economies, Education, Innovative Methodologies, Migration, and Sustainability. We anticipate further development of these core areas in future years, and our focus on early career researcher development will ensure the continued strength of Glasgow, Scotland and the UK in international development research broadly and in these sectors in particular.

Overall, the University of Glasgow has developed several new partnerships, leveraged our allocated funding into larger platforms to tackle global challenges, and provided training to students and staff in the UK and at our DAC list country partners. We were able to identify several areas of improvement in our planning and delivery mechanisms that will ensure greater success in our strategy for the next 3 years, which focuses on continuing to build these partnerships, exploring new opportunities and ensuring equitable collaborative relationships with colleagues in the Global South.

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