

# Heriot-Watt University

Global Challenges Research Fund Strategy  
2018-2021



**Annex A1: Template for institutional three-year GCRF strategies (AY 2018-19 onwards)**

Name of institution	Heriot-Watt University
Contact person for correspondence who is also responsible for ensuring that the head of institution has approved this strategy for submission to SFC.	
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Note that we intend to contact this person in the event of queries regarding the institutional GCRF strategy. We will also contact this person annually as part of our GCRF monitoring process.	
Has this GCRF strategy been approved for submission to SFC by the head of institution?	
Yes	
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Signature:	

## Section A: Heriot-Watt University strategy for development-related research

As identified in Priority 3 of our SFC Outcome Agreement, Heriot-Watt University's (HWU's) global research and innovation partnerships are fundamental to our ambitions. Building on our specialist areas of science, engineering, technology and business, we are actively promoting new interdisciplinary fields of research with global benefits, both economic and societal. Key to this is the development of further strategic collaborations through national and international alliances, to enhance the internationalisation of research and exploit knowledge exchange activities.

For all of our development relevant research we ensure ODA compliance by aligning our research projects with the UN sustainable development goals and by ensuring that activities can demonstrate a contribute to a reduction in poverty, and aim to further sustainable development or improve the welfare of the population of a country of the DAC list.

Heriot-Watt's current 5 year strategy (Strategic Plan: Global thinking, worldwide influence 2013-2018) includes the following priorities relating to our global aspirations and vision;

- Continue to grow rapidly all streams of international activity
- Enhance the internationalisation of research and knowledge exchange activities
- Facilitate international mobility for Heriot-Watt students and staff

The University has already begun work to update this plan for the 2018 to 2023 period. Our desire to ensure we grow and develop our research, knowledge exchange and impact, is consistent across these plans. Our portfolio of research aligns well with the main areas that provide the overarching framework for GCRF, the research areas below have been identified as being of strategic importance to Heriot-Watt University in relation to addressing global research challenges:

- Physical Sciences/Healthcare Interfaces
- Water Resources
- Environmental Risks
- Infrastructure Resilience
- Sustainable Energy
- Low Carbon Buildings

Our vision aligns strongly with the key aim of the GCRF which is “to ensure UK science takes the lead in addressing the problems faced by developing countries, whilst developing our ability to deliver cutting-edge research”. It is our ambition is to generate innovative solutions to intractable development issues, identify practicable pathways to healthier and safer lives, sustainable development and prosperity for all, equal and effective education, social justice and human rights, and stable institutions our capacity to do this is evidenced by our 2014 REF impact where Heriot-Watt was ranked first in Scotland<sup>1</sup>. In addition, we have a strong heritage of working closely with partners to make a difference and a lasting impact with our DAC country partners, see table below.

Heriot-Watt University was recently awarded International University of the Year by the Times and Sunday Times Good University Guide 2018 in recognition of our global presence and impact. We have campuses in Scotland (Edinburgh, Orkney, Scottish Borders), Malaysia (Putrajaya) and United Arab Emirates (Dubai) and our drive to work as ‘one Heriot-Watt’ has developed a culture and practice of working in strong and equitable partnerships internationally. We are committed to

working in collaboration, globally and intend to build on this international reach to improve lives in the poorest and most vulnerable communities.

<b>Region</b>	<b>DAC List Countries</b>	
	<b><i>Collaborating Institutions</i></b>	<b><i>Co-authored publications</i></b>
Asia and Oceania	196	547
Eastern Europe	11	35
Latin America and Caribbean	58	110
Middle East and N Africa	33	84
North America	12	26
Sub-Saharan Africa	39	92
Western Europe excluding EC	14	33
<b>Total</b>	<b>363</b>	<b>927</b>

Examples of previous and ongoing development research projects led by Heriot-Watt University are:

#### **Treatment of Arsenic Pollution**

Professor Bhaskar Sen Gupta together with the Bangladesh Green Energy Foundation, opened the world's first fully autonomous, solar powered plant to safely remove arsenic from the water supply. The technology has the potential to help millions of people who are being chronically exposed to high levels of arsenic in water on a daily basis. The plant, in the Comilla District of Bangladesh, is now ensuring a safe supply to 200 school children and, within a year, will serve an additional 800 members of the local community.

Funding source - EPSRC

#### **Smart Control of Rural Energy and Storage**

The SCORRES project is a partnership involving UK and Indian professional and government agencies. The project is developing and field testing, smart, automated irrigation technology on a 10 acre vegetable farm in Tamil Nadu, India. The team will use novel forecasting technology to manage the use of solar- PV capacity, electrical storage and demand to optimise the irrigation schedule. It is anticipated that the scheme will result in 60% reduction in water consumption. The aim of SCORRES is to test the feasibility of applying an integrated, whole-energy systems approach, that addresses the challenges of “transforming energy access” (TEA) by providing reliable, clean, affordable and renewable energy to poor rural households, enterprises and rural irrigation.

Funding source - Innovate UK

#### **Community-based mitigation of landslide risks in informal settlements**

Over one-quarter of the world’s urban population live in slums and informal settlements. Such settlements are vulnerable to the impacts of weather, climate change and ‘natural’ disasters such as landslides. Dr Harry Smith, is leading a multidisciplinary team of UK and Colombian HEIs, local consultants and a local community aiming to guard against these events before they strike. The team are investigating the risks associated with informal settlements on hillsides in Medellin City, Colombia. There are approximately 44,000 households living in these areas. The overall aim of the work is to develop bottom-up, collaborative approaches to deal with landslide risks.

Funding source – NERC

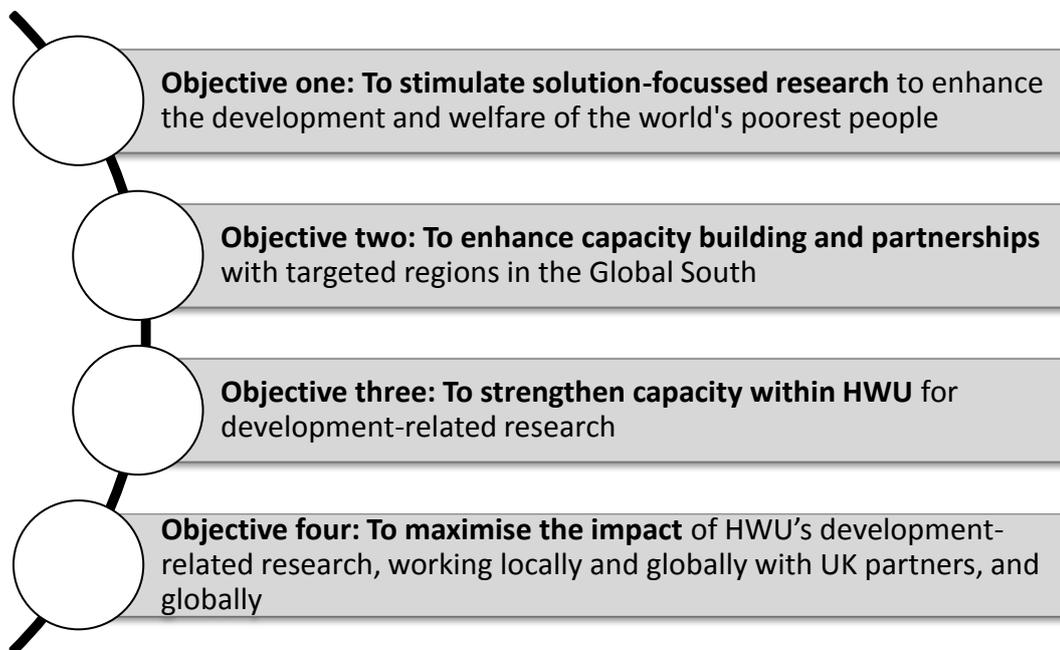
#### **Reducing energy consumption of data centres**

This Newton Project brings together innovative clean cold technologies developed in Malaysia and the UK, aiming to improve the sustainability of data centres by changing the way they are cooled. There are already around eight million private and commercial Data Centres globally, with the digital world predicted to grow 44 times between 2009 and 2020. Over half the electricity consumed by these Centres is for cooling. The aim of the project could reduce their energy consumption by up to 50%, improve energy security and reduce localised emissions caused by diesel powered backup.

Funding Source - Newton Fund- Research & Innovation Bridges

Heriot-Watt University has a heritage of generating impact from our research. We have recognised the need to make a difference by tackling challenges that face the poorest and vulnerable communities around the world. The growth in the availability of challenge-led, ODA research funding has created an opportunity for us to build on our development-related research ambitions. As such, development-related research has become a key component of the HWU research strategy by creating new opportunities for multi-disciplinary research that builds on our existing activities. To input into the strategy we have engaged internally and externally with key partners including 1) HWU-wide events with RCUK China, RCUK India and RCUK representatives focussed on ODA-related research 2) internal workshops to develop GCRF priorities and future theme areas 3) partnership workshops to focus on key themes e.g. GCRF hub events, clean cold, sustainable energy and resilient communities. We have also closely aligned our thinking with UK development frameworks including the GCRF Strategy, the UK Aid Strategy and the UN Sustainable Development Goals.

The Heriot-Watt objectives for development-related research are listed below and our GCRF priorities are described in the following sections:



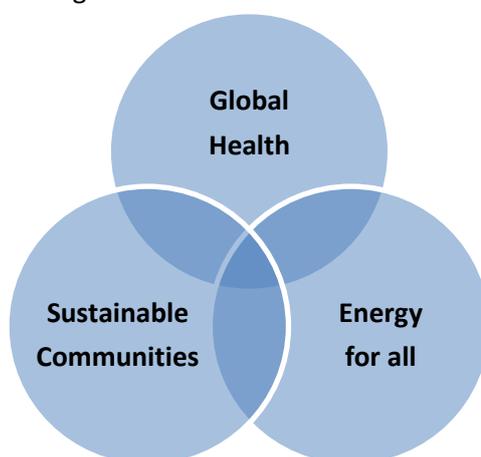
**Objective one: To stimulate solution-focused research to enhance the development and welfare of the world's poorest people**

The aim of the Heriot-Watt GCRF strategy is to impact on the lives of the poorest in the Global South. In working towards that goal, we will focus, and prioritise, solution-led research in key, priority themes. These themes align with the GCRF strategy and build on the existing strengths in disciplinary and multidisciplinary ODA-compliant research that is ongoing at Heriot-Watt University. We plan to build on and expand existing capacity through the meaningful inclusion of researchers currently not engaging in development research but whose research is relevant to our priority development themes.

**How will we deliver?**

**1) Priority themes**

We will focus on three key themes aligned with the GCRF priority areas and our current, and potential, areas of research strength:



**Global Health**

This theme aligns with the UK GCRF Strategy:

GCRF Strategy Challenge area of '*Equitable access to sustainable development*'

GCRF strategic themes 1) 'sustainable health and well-being' 2) 'clean air, water and sanitation'

Ensuring healthy lives and well-being is essential to improve the lives of the poor and vulnerable, globally. The growing pressures arising from global warming, population growth and an aging population all pose significant challenges. Persistent and emerging health issues continue to have an enormous impact on the lives of the vulnerable.

Developments in technologies to improve medical diagnostics and health care technologies are critical aspects to combating disease and maximising opportunities for individuals. In HWU we are primed to address global health challenges including imaging, microscopy (through to single molecules in living cells), downstream bioprocessing (creating products from cellular materials) and devices, diagnostics and apps. We have world-leading expertise and global partnerships in sanitation and solutions around access to clear water, a critical factor in the spread of disease. Our expertise is also concerned with evaluating the ability of a wide range of substances, such as nanomaterials, to cause adverse health effects following human disease.

## **Energy for all**

This theme aligns with the UK GCRF Strategy:

GCRF Strategy Challenge area of 'Equitable access to sustainable development'

GCRF strategic theme 'affordable, reliable, sustainable energy'

Energy is central to many major development challenges and solutions that the Global South faces today – economic growth, clean water, food production and national security. As a result global demand for energy has risen rapidly and is predicted to continue to rise at least 50% by 2035. The rate of growth is particularly acute in developing countries seeking to achieve economic growth and provide opportunities for their growing populations. Providing the energy needed to support development at an acceptable cost, and ensuring that it is used efficiently, is a huge challenge, especially if we also wish to transition to a low-carbon energy system necessary to contain global surface temperature rise to 20C .

We have significant international partnerships finding solutions to energy challenges around the world with the aim of improving the lives of vulnerable people, populations and ecosystems. We have develop the science and engineering of extracting, converting and conserving energy from novel sources in novel ways. We already have successful development projects exploring sources of energy from traditional renewables (solar and wind) to novel technologies such as bacteria and biomass. Recent development-related research partnerships have focussed on energy reduction and sustainability in DAC countries

## **Sustainable communities**

This theme aligns with the UK GCRF Strategy:

GCRF Strategy Challenge area of 'Sustainable Economies and Societies'

GCRF strategic themes 1) Resilience and action on short-term environmental shocks and long-term environmental change 2) Sustainable cities and communities

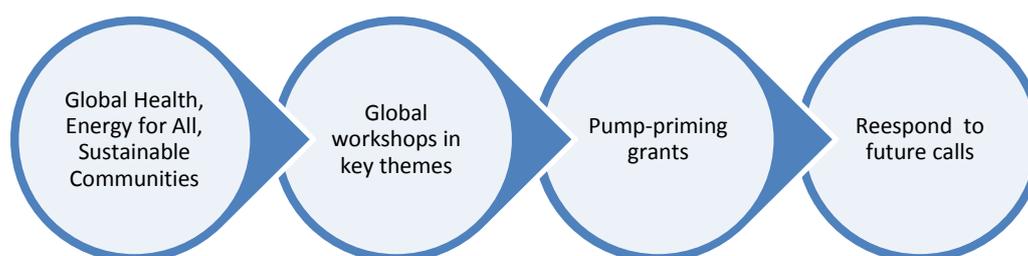
Today 50% (3.5 billion people) live in cities and this is set to rise to 60% by 2030. Cities face many challenges that must be overcome to allow them to develop and grow, while not straining land and resources. Yet, it is not only cities that are under pressure, many rural and island communities are facing an uncertain future. Common challenges include, lack of funds to provide basics services, a shortage of adequate housing and declining infrastructure, investments in infrastructure – transport, irrigation, flood defence, energy, and information and communication technology – are crucial to achieving resilience and empowering vulnerable communities.

With our expertise and knowledge in areas of construction, water and infrastructure we are well positioned to help address many of these challenges. Our Centre for Sustainable Building Design undertakes fundamental and applied research which helps shape our cities and towns and leads to a wealthier, fairer, healthier and safer sustainable society. At Heriot-Watt our approach is embedded in the mix of academic staff, who cover the full spectrum from engineering through to social sciences, and in the inter-disciplinary nature of research topics such as infrastructure resilience, carbon accounting, sustainability assessment, risk analysis, zero waste and human factors.

## 2) Workshops

We will facilitate face-to-face interaction and collaboration between HWU staff and our DAC country partners, which include those listed in our 'priority geographical regions' SE Asia, Sub Saharan Africa and South America. We will run three international workshops, one for each of our GCRF themes (Global Health, Energy for all and Sustainable Communities) in partnership with our priority DAC regions. Each workshop will focus on intractable challenges with impact in ODA partner countries. Invitees will include relevant international partners from our three priority regions; other Scottish and UK research collaborators; key development stakeholders including charities and NGOs. We intend to hold these workshops in the UK, Malaysia and Dubai, building on previous experience we have had running GCRF workshops at our international campuses. For the avoidance of doubt, the funds from our formula GCRF funding will not be used to support activities on our international campuses but the locality for the campuses to partner DAC countries mean that they provide suitable bases for meetings and network building activities.

Following the workshops we will support small international pump-priming projects to stimulate collaborative, multidisciplinary research relating to our priority themes. The aim of the pump-priming grants will be to prepare collaborative, international bids for future GCRF calls for proposals.



## 3) International networks

Heriot-Watt already works with a wide range of International partners from Universities to NGOs, local community groups and industry partners for example: The National University of Colombia, Grundfos, the largest supplier of agricultural water pumps in India; Sustainable Livelihoods Institute, a quasi-governmental body who are responsible for identifying technological and educational opportunities that will increase the revenues of the Indian Farming Sector, Scene Connect, specialists in the development of novel business models and micro-financing packages in developing countries and the Bangladesh Green Energy Foundation.

To help build on existing partnership and fledgling partnership opportunities we will establish a networking fund with the aim of increasing our contacts 'on the ground' in ODA countries. Networks will be encouraged in our priority theme areas and will be focussed on:

- Enhancing and broadening partnerships within an ODA country, or region, on a specific priority theme (Global Health, Energy for All and Sustainable Communities).
- Broadening international networks beyond a single ODA country to expand into a wider geographical region.
- Working with international partners to share best practice and enhance research and innovation capacity in-country

<b>Objective two: To enhance capacity building and partnerships with targeted regions in the Global South</b>
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Heriot-Watt University has a unique international footprint and as a result strong, and equitable relationships with partners overseas. We intend to build on the reach and expertise of our international campuses in Scotland (Edinburgh, Orkney, Scottish Borders), Malaysia (Putrajaya) and United Arab Emirates (Dubai), to create a focussed and impactful regional GCRF strategy.

**How will we deliver?**

- 1) **Prioritise geographical regions** where we can have most impact:

**South East Asia**

***Focus countries – Malaysia, Thailand, Philippines, Indonesia and Vietnam***

We already have substantial links with SE Asia, through our University's Malaysia campus, established in 2013. We were recently successful in a significant Newton Fund bid, with Malaysian partners, to support research in sustainable and clean energy use in data centres. Our vision is to build on these relationships, using our Malaysia campus as a hub to reach out to international partners and support and stimulate collaboration across the SE Asia region.

**Sub Saharan Africa**

***Focus countries: Nigeria, Botswana, Kenya, Ethiopia, Zambia, Uganda, Tanzania and Malawi***

Sub Saharan Africa faces significant development challenges with nearly half of all children living in extreme poverty. Three of the four Scottish Government Development Programmes are focussed in sub-Saharan Africa and this is a key priority region to build development partnerships. We intend to use our Dubai campus as a hub to allow exchanges and partnerships to build with Africa, in particular sub Saharan Africa. We have strong exiting relationships with Africa that we aim to build on. Currently, 460 African nationality students study at the HWU Dubai Campus and we have extensive African engagement with our global MBA programme, run through our business school.

**South America**

***Focus countries: Brazil, Chile, Colombia, Argentina and Venezuela***

Heriot-Watt University has excellent, and growing partnerships, with South America. We have active GCRF and Newton funded projects in Columbia and Brazil, and are currently developing a stage two GCRF hub bid with our collaborators in Brazil, called 'Amazon: Too Big to Fail'.

Our focus countries are based on where we already have development-related partnerships:

**Table one: Heriot-Watt University collaborations with DAC partners**

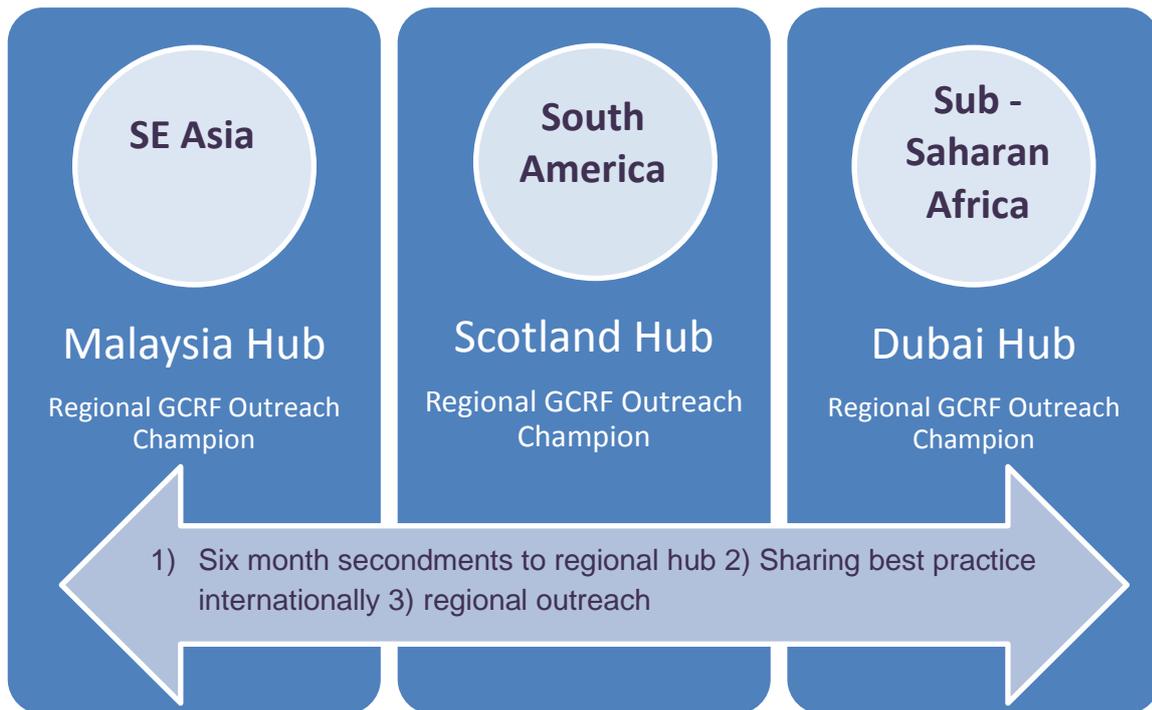
Region	DAC List Countries	Publications	Institutions
SE Asia	Malaysia	48	14
	Thailand	6	5
	Philippines	5	2
	Indonesia	4	2
	Vietnam	2	2
South America	Brazil	65	30
	Chile	16	9
	Colombia	12	7
	Argentina	6	6
	Venezuela	4	2
Sub-Saharan Africa	Nigeria	23	7
	Botswana	8	2
	Kenya	7	5
	Ethiopia	7	5
	Zambia	6	1
	Uganda	5	1
	Tanzania	5	3
	Malawi	1	1

## 2) Capacity Building Activities with our key partners overseas

We will create three geographical hubs through our campuses in Scotland, Dubai and Malaysia to enhance exchange between our DAC country partners and our HWU staff. To achieve this we will

- Appoint regional GCRF champions in each of our campuses. Regional champions will be based in Malaysia, Dubai or Scotland and will spend 20% of their time working regionally in our GCRF priority regions. They will lead on building links with GCRF partners in the region and identifying and facilitating partnerships with most potential for impact on economic and social development of the region.
- We will support six month secondments of early career academics and PhD students to the UK, from regional DAC country partners. Secondees will work with HWU to partner on ODA-eligible research projects aligned to solving development solutions
- We will share best practice with international ODA partners on how we deliver and manage research and innovation support with two-way exchange activities for Heriot-Watt academics and DAC country partners in our priority regions.

The objective of the secondments will be to enhance the research and innovation capacity, and ultimately economic development, of our partner ODA countries.



**Objective three: To strengthen capacity within HWU for development-related research**

A vital component of our strategy is to grow the research community in Heriot-Watt who understand the role their research excellence can play in creating innovative solutions to intractable development challenges. The GCRF poses a great opportunity for our researchers. Heriot-Watt has experience in successfully carrying our development research but there is also a need to enhance capacity of our staff to ensure appropriate training, skills and knowledge exists to support and carry out development research.

We will actively support those already working on development-related research and build their skills, capacity and partnerships. An important aim will be to stimulate participation of researchers who may not previously have considered the applicability of their work to development issues, particularly in the field of engineering and physical sciences. To ensure we are successful in supporting these activities we will also build capacity and knowledge of our research support team.

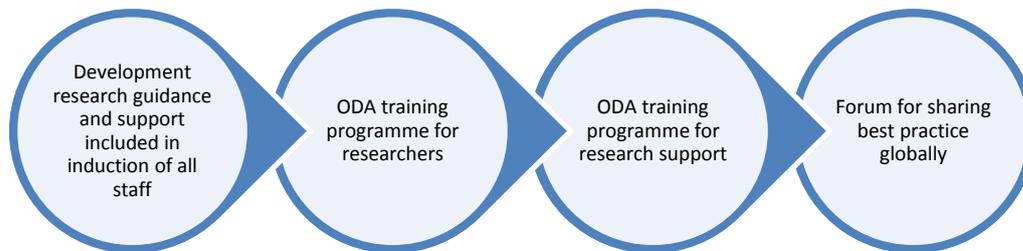
**How will we deliver?**

**1) Enhancing capacity through induction and training**

All new researchers joining HWU will be given information on ODA research and how it is supported as part of their induction meeting when they first join the university, currently conducted by a member of the Research Services team. They will then be signed posted to the research training material that will be developed as part of this project.

Working with our Academic and Learning Development team we will create a research training programme for 1) HWU researchers and 2) research support staff. This will include information and

training on ODA compliance, routes to development impact within the lifetime of the project, and routes to help researchers move into ODA relevant research. This training programme will be implemented across our campuses, globally, and be comprised of an on-line mini-MOOC (Massive On-line Open Course) designed to be completed in a single sitting and a hands-on practical workshop that will be delivered once a year at each campus.



## 2) Effectively applying our current expertise to development solutions

Many significant challenges facing the Global South could be progressed by excellent engineering and physical science solutions. Building on our long-established, high quality research strengths in engineering and technology, there is a significant opportunity to better align HWU research to development applications. To ensure this is realised, we will recruit a Global Challenges Research Translator. The Global Challenges Research Translator will work with HWU researchers globally to identify and find routes to translate non-ODA to viable ODA projects, especially in the area of Engineering and Physical Sciences.

This activity will include:

- Ensuring that the need is driven by ‘pull’ - identifying development ‘needs’ and understand how these ‘needs’ align to our research.
- Working with clusters of academics with a wish to create demonstrators and create capacity to help deliver high impact technology solutions.
- Building effective relationships and undertake visits to stakeholders as part of the engagement process.

The role of the Global Challenges Research Translator will help build relationships and catalyse new impact routes and partnerships not already identified. This will help create capacity to help foster new pathways to impact and deliver high impact research outcomes.

## 3) Strengthening existing development research in HWU

We will create opportunities through sharing best practice with our partners, globally. The sharing of knowledge and experience of development-related research will be a key part of events and projects supported through the GCRF funding. We will also launch a shared, global platform to share best practice and successes of GCRF and development-related research to our academic community and external partners.

**Objective four: To maximise the impact of HWU’s development research, working locally with UK partners, and globally**

We will support capacity building in our DAC country partner countries, working with our international partners to build in-country skills and knowledge in research and innovation. Where we can maximise our impact, we will work together, and share best practice, with other Scottish and UK institutions to bring together researchers from different disciplines and expertise to help tackle challenge-led research questions. We will build relationships with new partners with expertise in development e.g. NGOs, charities.

**How will we deliver?**

**1) Expand our ODA-relevant partners in collaboration with Scottish HEIs**

In partnership with other Scottish HEIs we will facilitate delegations to and from Scotland to Intragovernmental organisations such as the UN and the World Bank, and country or region specific delegations utilising the expertise and networks of the relevant Science Innovation Network teams and British Council.

**2) Work in partnership with HEI partners to enhance capacity of our early career researchers**

We will work with Scottish and UK partners to enhance international capacity building for Leadership in Development Research by i) designing bespoke ‘Crucible-style’ initiatives for networks of early career researchers around intractable development challenges and ii) establishing a follow-up mentoring exchange and Alumni Network programme to maximise collaborative impact of participants in the longer-term.

Heriot-Watt University has extensive experience in designing and delivering research leadership and development programmes for early career researchers through its award-winning Centre for Academic Leadership & Development. It has been identified as providing “Outstanding Support for Early Career Researchers” (Times Higher Education) and was one of the first Universities in the UK to receive “HR Excellence in Research” recognition from the European Commission for its institution-wide support for our research staff community. Notably, the Centre has led national coordination of the highly-regarded “Scottish Crucible” programme for the past 9 years via support from the Scottish Funding Council, Royal Society of Edinburgh, Scottish Government, Scottish Parliament and all of the Universities in Scotland. Scottish Crucible is widely recognised as Scotland’s most prestigious leadership and development programme for early-career academics who come from all science & arts disciplines and all Scottish research institutes/HEIs. Through an intensive programme of Crucible Labs, it enables participants – “Scotland’s research leaders of the future” - to broaden their networks and become more creative, interdisciplinary and innovative in their research. The Scottish Crucible Alumni Network (now numbering > 300 research leaders who represent 42 nationalities, 29 research institutions and a 50:50 gender ratio) report how, following the programme, they have changed the way they undertake research and cite wider research impacts with multiple sectors including academia, industry, business, policy and the media.

Based on the success of our Crucible development approaches, we have further designed other interactive “Research Connect” events to stimulate collaboration across disciplines and international boundaries, and share best practice for capacity building (e.g. invited by the British Council to host a Crucible-based ‘Research Leadership and Development’ programme at Heriot-Watt University for a group of 30 early career researchers from Pakistan Universities visiting Scotland from 25th – 31st March 2018). In this Global Challenges Research Fund project, we will work in partnership with other HEIs to further share our collaborative Crucible expertise with our partners and collaborators in Scotland and beyond.

### **3) Creation of a central flexible fund for strategic partnerships with other Scottish Universities.**

We will ring-fence 5% of our GCRF funding to ensure we can flexibly partner with other Scottish and UK universities on other GCRF projects and to support our active contribution to other HEI GCRF-related events and projects.

#### **Relationship between GCRF Strategy and the HWU strategy for REG**

Our institutional strategy for the use of our REG is to deploy the funding to underpin and support research excellence on our UK campuses. This is entirely consistent with our GCRF strategy and it is the UK based research excellence that we will align with our development-related research. It is only through such alignment that we will bring the necessary expertise to solve the intractable challenges arising in the UK Strategy for GCRF.

#### **Barriers and enablers to implementing our strategy**

##### **High quality research areas with GCRF potential but yet to engage with the opportunity**

Currently, our existing research connections with DAC list counties are primarily focussed on the social and environmental sciences. Although we have a number of strong, successful ODA compliant research collaborations in DAC countries, we must capitalise on the opportunity to broaden both the research activity and ‘on the ground’ networks to all areas of our research expertise, especially the engineering and physical sciences. We will use our engineering expertise to impact on GCRF goals.

##### *Enabler*

*We will introduce a ‘Global Challenges Research Translator’ to identify research with a wider development impact and build GCRF partner relationships.*

##### **In country partners and requirement to build even stronger DAC networks**

Heriot-Watt University is very well connected internationally. It is still, however, sometimes a challenge for key researchers to find the right partners overseas and have the time and capacity to build their international partnerships.

##### *Enablers*

*We have existing geographical positioning in SE Asia and Africa*

*We will introduce networking grants and International workshops to stimulate and expand new support development partnerships.*

*We have strong working relationships with British Geological Survey who share our GCRF aspirations and have a complementary DAC country stakeholder network.*

### **Research capacity**

Development research partnerships take time and effort to progress. There are changes in the opportunities for researchers, including the introduction of the Industrial Strategy Challenge Fund and the impending REF. Finding the time, and capacity, for researchers to get involved with development research may be a challenge.

#### *Enabler*

*We will enhance resource to specifically support development research and will prioritise themes and countries for partnerships.*

*We will assign a proportion of key, relevant staff to support GCRF activities.*

*We will recruit 2FTE new academic staff over the next three years to align to GCRF strategic priorities*

### **Due Diligence**

Ensuring all our project partners are reliable and that we have the skills and capacity to carry out due diligence checks when necessary.

#### *Enabler*

*We will train our staff and employing due diligence consultants to support complex arrangements.*

## Outcomes and Impacts

The outcomes and impacts are a critical component of measuring how we have: 1) delivered our GCRF strategic objectives 2) ensured ODA compliance 3) contributed to poverty alleviation and wider ODA objectives.

We intend to encourage and support early thinking about evaluation of outcomes and impact for all our GCRF-funded activities. The expected outcomes and impacts we have listed, relate closely to the GCRF strategic objectives:

1. Increase the number, knowledge and capacity of researchers carrying out development-related research in HWU with clear line of sight to ODA objectives  
*Measure - number of staff engaged in development partnerships supported by networks and pump-priming grants*
2. Increase the number, knowledge and capacity of researchers carrying out ODA-compliant, development-related research with our DAC country partners  
*Measure - number of staff engaged in GCRF partnerships supported by networks and pump-priming grants*
3. Increase our regional partnerships with ODA countries using HWU international campuses as international hubs for research partnerships and capacity building activities  
*Measure – number of regional countries engaged in collaborations*
4. Increase in the number and value of GCRF bids we submit and secure through UKRI calls  
*Measure – number and value of GCRF grants/income*
5. Working in partnership to influence policy and practice in our partner DAC countries  
*Measure – qualitative and quantitative feedback from our DAC-country partners*
6. New streams of ODA compliant research activity in engineering and physical sciences  
*Measure – number of partnerships, networks and development-research partnerships involving engineering and physical sciences researchers previously not engaged in development-related research*
7. Partnerships with significant ODA global partners facilitated by collaborative action across Scotland  
*Measure – number of partnerships and events with global DAC partners*
8. Increased networking between HWU researchers and with ODA partners globally  
*Measure – number of HWU partnerships with DAC researchers working on ODA compliant research*
9. Clear lines of development impact in our three priority themes of Global Health, Energy for All and Sustainable Communities  
*Measure – increase in number of direct interventions (e.g. policy changes, implementation of technological solutions, increase in local-level expertise and resources to enable communities to take action to address local challenges) that protect and amplify ecosystems services, and hence deliver multiple societal benefits and work to alleviating poverty.*

10. Clear lines of development impact in our three priority regions of SE Asia, South America and Sub Saharan Africa

*Measure – the number of impact cases studies from GCRF projects both considered for inclusion and included in our REF21 submission.*

## Management of GCRF

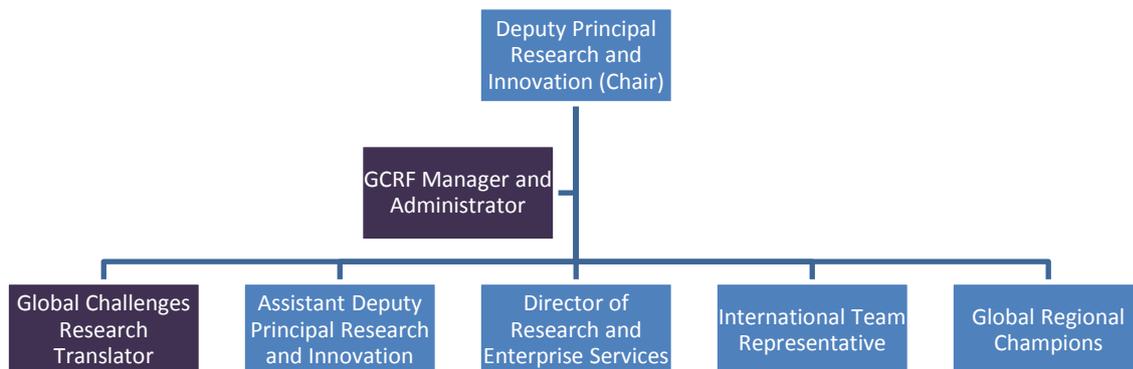
Effective monitoring and compliance is critical to success, and the Research and Enterprise Services unit will monitor this. To ensure staff are properly trained we will build on their existing knowledge to create fully trained experts in ODA compliance, due diligence, pathways to development, development related impact and cross border relations.

To ensure ODA compliance, all new research proposals will be subject to rigours ODA statement checks, and training will be provided for both researchers and evaluators. We will develop log frames, theory of change models and Key Performance Indicators (KPIs) as appropriate, to monitor and evaluate activities, outputs and impacts.

One of our team members previously led on the management of the Newton Fund at BEIS and oversaw the UK's approach to monitoring ODA compliance and activity tracking. We will build on this experience to ensure we are ODA-compliant in all areas of our GCRF-funded work.

### **Governance**

We will establish a small ODA Management Group consisting of the GCRF manager (Clerk), Deputy Principal of Research (Chair), Assistant Deputy Principals of Research, Director of Research and Enterprise Services, Global Challenges Research Translator and member of our international team. The group will meet monthly to 1) share information on future development/GCRF funding opportunities 2) maintain an oversight of GCRF projects in development 3) oversee the three year GCRF plan and related reporting information. The GCRF Champions will be invited to attend the ODA Management Group on a rolling base to report on activity and progress.



To help manage, support and deliver all key activities Heriot-Watt University will commit existing academic and support staff to work on the project, including:

**Table two: Contribution of HWU staff time to deliver GCRF strategy**

Heriot-Watt Role	% of role spent on GCRF activities
Deputy Principal Research and Innovation	5%
Assistant Deputy Principal Research and Innovation	20%
Director of Research and Enterprise Services (RES)	10%
Impact Manager	20%
Deputy Director of RES	10%
Director of Scottish Crucible/Head of ALD	10%
ALD Researcher Development Coordinator	5%
International Team Representative	10%
Regional Champions x 3	3x 20%

The day-to-day running and implementation of the project will be undertaken by the appointment of a GCRF Project Manager, a Global Challenges Research Translator and a Project Administrator, to be supported from our GCRF allocation.

### **Reporting**

A three year plan with identified quarterly and annual milestones will be developed. This will be monitored and updated monthly by the ODA Management Group.

A central record of all ODA activities supported by this grant, including

- 1) Name of project/activity
- 2) Justification of ODA compliance
- 3) ODA country/region
- 4) Impact of GCRF activity

This will be updated monthly to ensure a clear record and justification of activities

### **Impacts**

We will ensure that impacts from the GCRF activities are monitored and recorded. Currently at HWU, we have a dedicated impact manager who will support and advise on this work.

### **Training**

One fully dedicated member of staff in the research and innovation services team will undergo training in 1) ODA compliance 2) ODA reporting 3) due diligence

## Section B: Use of GCRF 2018-19 allocation and future formula GCRF priorities

*Please complete the table in Annex A2 detailing the expected spending and activities for GCRF in the academic year 2018-19. This should show how all expected GCRF will be committed to ODA-compliant activities.*

*Please add here any explanatory notes on how you have completed the table in Annex A2 that will demonstrate ODA compliance.*

The activities presented in Annex A2 have been designed in particular to build and strengthen Heriot-Watt's existing partnerships and facilitate new relationships in order to ensure that stakeholders within our prioritised geographical regions from all sectors (voluntary and community sector, commercial and private and/or public sectors and government) are fully engaged in our ambitious plans to build on our specialist areas of research to ensure global benefits, leading to economic and societal impacts to fairer, healthier and safer as well as sustainable communities.

Our priorities for the period 2019-20 will focus on *Objective 1 – Stimulating Solution Focused Research, Objective 2 - Capacity Building*, by hosting two international workshops, and supporting network meetings in-country to build links and develop new relationships in order to foster collaborations. This will be underpinned by the availability of a pump-priming fund to support small scale projects e.g. feasibility studies, pilot studies & literature reviews, in order to position ourselves with our international partners to increase the number of larger scale collaborative proposals we submit to UKRI calls.

A significant proportion of our GRCF allocation for this period has been allocated to support pump-priming projects in order to front load this activity to enable us to mobilise quickly towards larger collaborative projects, resulting in tangible and measurable impact within the GCRF strategy period 2018-21.

Running in parallel to these activities will be underpinning support to increase the engagement of the academic community in HWU and DAC nations with the international development challenges faced by developing countries, through the creation of a research training programme and the global sharing platform. The platform and tools to support the training programme will be developed and launched in this period and will be made available to are partners.

*What are your priorities for GCRF activity in 2019-20? Please describe how the profile of activity will adjust to increases or decreases to expected GCRF funding.*

During the GCRF activity period 2020-21 our activities will continue to support *Objective 1 – Stimulating Solution Focused Research* and *Objective 2 - Capacity Building*. We will run a final workshop focused on one our thematic areas and continue with supporting in-country networking, making available pump priming funds to support early-stage projects. Our focus in terms of participation in these activities will be countries where we have limited existing partnerships and where the opportunity arises to undertake exploratory projects in new communities, translating successful outputs from other regions/communities developed from projects in year 1.

Educating and knowledge exchange activities to increase engagement of the academic community and HWU and DAC nations will continue through access to the training programmes, which will have

been fully established in year 1. As funding is only required to support the maintenance of these programmes less funding will be required to support this activity.

Year 1 networking activities will have helped us identified key stakeholders and potentially new DAC regions we wish to engage with, which we envisage will open the opportunity for an increase in delegation visits working in partnership with other Scottish HEIs to facilitate these visits. As such we would expect to increase funding support for this activity in the funding period 2019-20.

*What are your priorities for GCRF activity in 2020-21? Please describe how the profile of activity will adjust to increases or decreases to expected GCRF funding.*

Our priorities for GCRF period 2020-21 will continue to span across all of our key objectives, with a particular focus on pump-priming early stage projects that will have been developed from the building of new partnerships from the workshops and networking that will take place in year 2 & 3. In addition continued support will be given to the application and translation of non-ODA research to ODA projects following the scoping work that will have been undertaken by the Global Translator in year 2 & 3 to identify these opportunities.

This focus in the period 2020-21 will aim to ensure that we build on the capacity building that will have taken in year 1 & 2, to ensure new pathways to impact and high impact research outcomes.

Annex A2: Global Challenges Research Fund: Three-year institutional GCRF strategies (academic year 2018-19 onwards)

Table A: Detailed proposals for spending of QR GCRF in academic year 2018-19

Note: 'GCRF' = 'Global Challenges Research Fund'; 'DAC' = 'Development Assistance Committee'.

Project	Type of activity	Formula GCRF (£)	Research Council or other (£)	DAC nations	Benefits to DAC nations	Outputs and impacts
Description of the activity or project title.	Capacity and capability building. Mono-disciplinary, interdisciplinary and collaborative research. Generating impact from research. Meeting full economic costs of research funded by other sources. Rapid response to emergencies with an urgent research need. Pump-priming.	Level of funding used from formula GCRF allocation.	Project funding from Research Councils or other sources (please indicate whether these are GCRF awards).	Nations involved or benefitting as listed by the DAC.	Description of primary benefits to economic and welfare development in partner DAC nations.	Description of intended outputs and impacts.
Project Management & Delivery	Capacity and Capability Building	£65,070	£42,103 (Heriot-Watt in-kind support senior academic leads & management Board)			
International Workshops - 1. Global Health 2. Energy for All 3. Sustainable Communities	Capacity and Capability Building	£8,000		South America/Brazil, South East Asia/Mayaysia, Sub Saharen Africa countries	Promotion of strong, enduring and equitable partnerships between academic and in-country communities in the UK	Increase the number our regional partnerships and collaboraitons with with ODA countries/increase the number of HWU partnerships with DAC researchers working on ODA compliant research
Project Initiation Fund	Pump-priming/mono-disciplinary, interdisciplinary and collaborative research/generating impact from research	£248,380	£13,000 (Heriot-Watt in-kind support, Research Impact Development Manager)	All our priority regions South America, Sub Sharran Africa, South East Asia	Development and promote interdisciplinary research, emphasising economic and sociteal benefit, generating high impact outputs and attracting signficiant research funding to increase critical mass/Support to pilot projects and iniatives in-country to contribute to a reduction in poverty and aim to further sustainable development	Increase in the number and value of GCRF and other research bids/Increase direct interventions including policy changes, implementation of technological solutions, increase in local-level expertise and resources to enable communities to take action to address local challenges
Networking Fund	Capacity and Capability Building/Managing and delivering on strategic partnerships	£30,000		All our priority regions South America, Sub Sharran Africa, SE Asia with a particular focus on contries we have fledging relationships with including Indonesia, vitenam, Venezuela, Botswana, Zambia, Uganda, Tanzania and Malawi	Promotion of strong, enduring and equitable partnerships between academic and in-country communities in the UK/Stimulate and build new relationships to build trust and between academic researches and communities in the DAC nations.	Increase in the number of regional countries engaged in collaborations
Secondments/Knowledge Exchange visits/partnership building	Capacity and Capability Building	£80,120	£8,000 (Heriot-Watt in-kind support for Regional Champions)	All our priority regions South America, Sub Sharran Africa, SE Asia with a particular focus on contries we have fledging relationships with including Indonesia, vitenam, Venezuela, Botswana, Zambia, Uganda, Tanzania and Malawi	Strengthening exchange of knowledge through culture and capability development in DAC nations	Increase the number of DAC nation research students/academics & other stakeholders commensurate with an expanded research landscape.
Research Training Programme	Capacity and Capability Building	£11,000		All our priority regions South America, Sub Sharran Africa, SE Asia	Strengthening exchange of knowledge through culture and capability development in DAC nations	Increase engagment of the academic community with international development challenges faced by developing countries to enable
Scottish Delegations to promote research collaborations and build strategic level partnerships	Pump-priming/managing and delivering on strategic partnerships. This will include delivery support in the form of shared resources between the University of Stirling and Heriot-Watt University supporting International Crucible, Mentoring and Strategic Partnerships	£39,000		All our priority regions South America, Sub Sharran Africa, SE Asia	Strengthening exchange of knowledge through culture and capability development in DAC nations	Increase the number of DAC nation research students/academics & other stakeholders commensurate with an expanded research landscape.
	<b>Total</b>	<b>£481,570</b>	<b>£63,103</b>			