



UK Collaborative on
Development Research

An aerial night photograph of a densely populated city, likely Seoul, South Korea, showing a mix of modern high-rise buildings and older, more compact structures. The city lights are visible against a dark sky. A large, white, semi-transparent circle is superimposed over the center of the image, containing the text.

DISASTERS RESEARCH GROUP

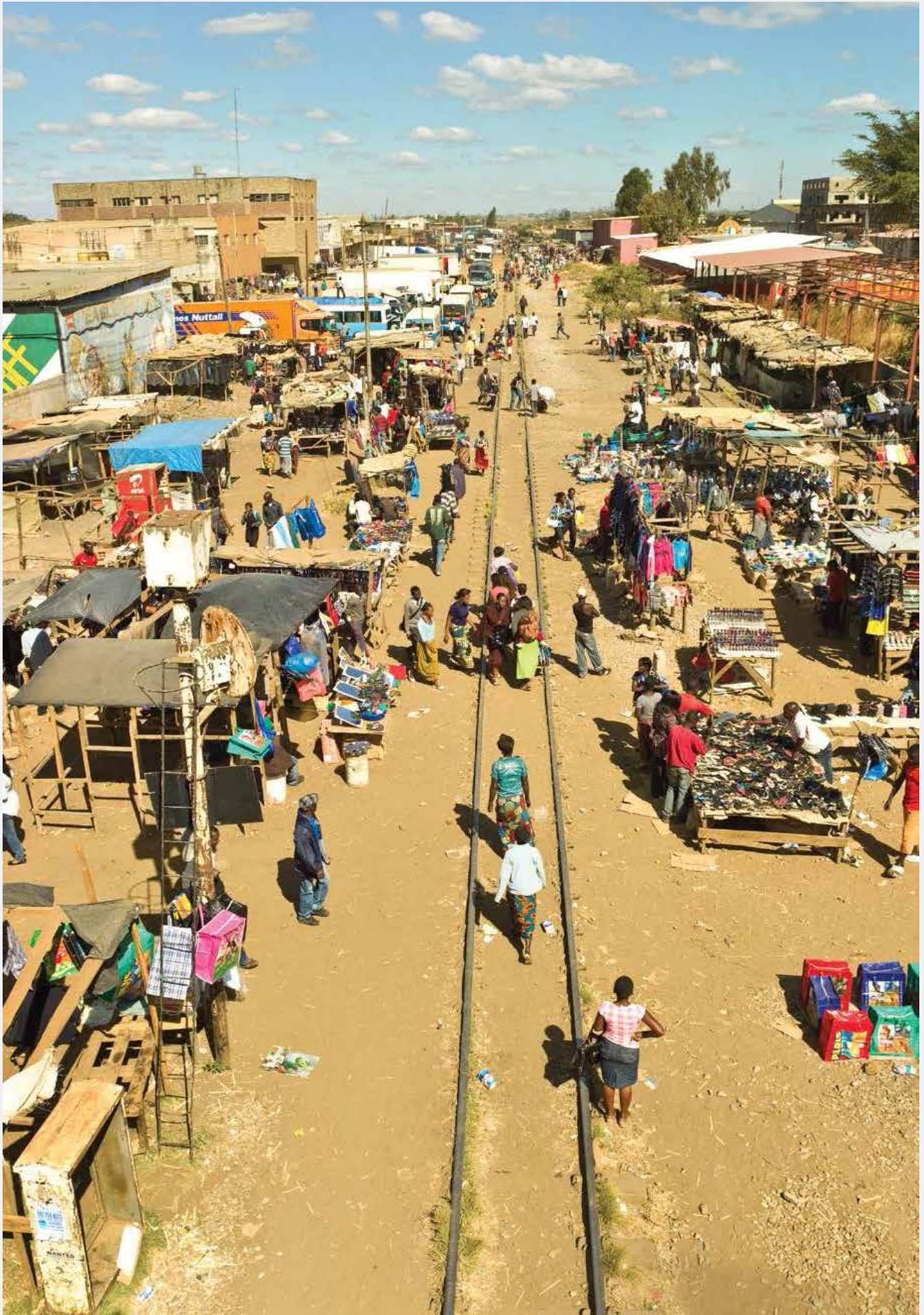
10TH ANNIVERSARY

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Front Cover Photo: UN Photo/Kibae Park

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Introduction

Society faces unprecedented environmental, social and political problems in our complex, resource-limited world. In recognition of this, in 2015 world leaders adopted the wider 2030 Agenda to take urgent action on development through the 17 Sustainable Development Goals, climate risk through the Paris Agreement and on disaster risk reduction through the Sendai Framework.

The agenda is massively challenging – it commits by 2030 to globally eradicate poverty and achieve sustainable development - leaving no-one behind, to substantially reduce the cost of disasters and to radically constrain global temperature rise. The societal need for development and enactment of the wider agenda is becoming more urgent by the day- as was recently trumpeted in September’s UN Climate Action summit. It demands the development and application of unprecedented transformative approaches and ways of working, based on sound research.

These should not be constrained by the traditional boundaries of disciplines, sectors, and governance, nor should they be necessarily be defined by traditional relationships. Hence, new partnerships between funders, providers, and users of research, both nationally and internationally, across all scales, will be required to meet the targets of the wider agenda.

Those engaged in delivering the agenda urgently need to re-think how partnerships can be developed and empowered to drive research into transformative action. In approaching complex challenges, research requires increased interdisciplinarity and coproduction.

For impactful research multiple stakeholder relationships need to be cultivated and facilitated. There are a range of partnership models that shape how this is being done now, some established, others more novel and this event is an opportunity to step back, review what works and what does not, explore scope for learning within and across models and consider implications for future research funding, capacity building and key collaborations.

To commemorate the 10th anniversary of the Disasters Research Group (DRG), we brought together research funders, research users and the UK research community focused on ODA relevant risk, resilience and sustainability research to explore new partnerships for delivery of the wider 2030 Agenda.



THE
DISASTERS
RESEARCH
GROUP

About The Disasters Research Group

The Disasters Research Group (DRG) enables UK-based funders of Disaster Risk Reduction (DRR) research to informally share information on policy interests, gain an update on international research initiatives, and collaboratively shape investment plans. The group is highly influential in international disaster risk reduction research and uptake.

The DRG aims to support delivery of components of the UK's commitment to DRR investments, initiatives, investments and impacts by enhancing research and technology based DRR, primarily through improved networking, collaboration and coordination of UK and international funders.

The group evolved from the increasingly frequent and loud international calls for more effective engagement between DRR research funders and users in the years leading up to the DRG initiation in 2009. The relevance and importance of this agenda has grown further since then.

Most DRG members are senior representatives of organisations supporting DRR research through direct funding, collaborative support, in-kind services or indirect means. UK representatives of international DRR organisations are also members. The DRG is multi-institutional and non-Departmental. Members support the group because they anticipate the benefits of improved DRR delivery that will accrue through enhanced collaboration. The DRG is thus self-governing; member organisations support the participation of their representatives.

Most DRG business occurs in quarterly meetings, within which planned DRR delivery actions are identified and discussed. The decision to commit to joint actions remains with each organisation. The DRG, however, recommends how resources should be apportioned for: actions attributed to the secretariat- which is provided by the UK Collaborative for Development Research (UKCDR); that require additional resource; or that require a temporary sub-group to be established.

Recent (2015-2016) landmark UN international agreements - including the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (SDGs), the Paris Agreement and the World Humanitarian Summit - all recognise the importance of shaping international research on disaster risk mitigation and making sure that it is not only useful, and usable, but also used.

DRG MEMBER ORGANISATIONS

- Bond for International Development (NGO sector)
- Civil Contingencies Secretariat; Confederation of British Humanitarian Agencies
- Department for International Development (DfID)
- Economic and Social Research Council (ESRC)
- Enhancing Learning and Research for Humanitarian Assistance (ELRHA);
- Foreign and Commonwealth Office (FCO)
- Group on Earth Observations (GEO);
- Global Challenges Research Fund (GCRF)
- Government Office for Science (GO-Science)
- Integrated research on Disaster Risk (IRDR)
- Intergovernmental Panel on Climate Change (IPCC)
- Natural Environment Research Council (NERC)
- Public Health England (PHE); Royal Society
- START Network; UK Research and Innovation (UKRI)
- UK Space Agency (UKSA)
- UN Office for Disaster Risk Reduction (UNDRR)
- Wellcome Trust
- the World Meteorological Organisation (WMO)

Functions

1. Support of UK-based international DRR research

A. The DRG shares information on UK funding activities and encourages collaboration between its members and others, where appropriate. Much of this is focused within its meetings. Resulting collaborative ventures have included:

- **Development of Joint Research Programmes**, including those on:
 - ◇ ***Increasing Resilience to Natural Hazards Programme*** (NERC-ESRC 2010-2018 £5.8m) which characterised the complex nature of risks – both physical and social - in earthquake-prone and volcanic regions. This programme addressed risks arising from multiple natural hazards, and increased population resilience to high impact events in the Himalayas, Caribbean and Latin America. A strong interdisciplinary approach to research throughout the programme enhanced the uptake of scientific advice and increased understanding of vulnerability and risk;
 - ◇ ***Science for Humanitarian Emergencies & Resilience*** (DfID-NERC-ESRC 2015-2022 £19m) which is focusing on disaster risk assessment (mapping and analyses), sub-seasonal to seasonal forecasting, disaster risk monitoring, and the integration of these into practical decision making in sub-Saharan Africa and south Asia using multi-disciplinary problem-centred approaches. The programme is addressing the intersection between the hydro-meteorological sciences and geophysical sciences that is necessary for monitoring and predicting cascading (or secondary) natural hazards such as landslides and floods that follow primary natural hazard events;
 - ◇ ***Building Resilience to Environmental Hazards*** (NERC-AHRC-ESRC 2017-2018 £4.5m) which developed inter-disciplinary approaches to understanding resilience to natural and man-made environmental hazards across lower and middle-income country contexts. The focus has been on building resilience in relation to both sudden and slow-onset environmental hazards (for example land-degradation, deforestation, drought, hurricanes or climate change), taking into account the intersections and relationships with other contexts such as conflict and fragility, poverty and famine, urbanisation, economics and health or disease risks.

B. The DRG provides funders, research providers and users with readily available and relevant information on research gaps and foci. The information required by members is derived from many sources; these have included:

- **Structured reviews**, including timely assessments of research providers, international funding initiatives and expertise available for crisis response. For instance, DRG members contributed to the ***Improving Future Disaster Anticipation & Resilience*** (GO-Science) Expert Group (2011-2012) to identify actions that could be taken within the decade to reduce the impacts of disasters arising from hazards up to the year 2040. The DRG has commissioned and published its own reviews of parts of the DRR research landscape including those on ***Societal impacts of natural hazards: a review of international research funding*** (2011), and ***Disaster***



(left)
Banda Aceh, Sumatra, Indonesia,
following the 2004 Indian Ocean
earthquake and tsunami
SOURCE: Michael L. Bak



(right)
Monsoon season, Thailand
SOURCE: IRDR

Risk Reduction Research Prioritisation (2012). Other reviews have been jointly undertaken with partner organisations, such as the *Research and Innovation Mapping Study* - with the UK Water Research and Innovation Framework.

- **Access to knowledge about the state of cutting-edge DRR science and emerging research gaps** is largely provided by working with its sister organisation the UK *Alliance for Disaster Research* (UKADR). To encourage competition between science suppliers, and to avoid conflicts of interest, primary DRR research providers (e.g. university groups or consultancies) are not included as DRG members. However, active interaction with them and other non-member DRR organisations is critical to DRG success and they participate in many DRG activities. To facilitate interaction, the DRG initiated formation the UKADR (2015-present). The UKADR brings together UK government departments, academic groups, consultants and other research providers to identify research gaps, prioritise science agendas, develop collaborative consortia, and represent UK Science on international DRR research bodies, including the UNDRR and International Science Council (ISC) sponsored IRDR programme. The UKADR Chair holds the status of an ex officio member of the DRG, permitting participation in DRG meetings, but without full-member status.
- **Workshops to refine Research Agendas.** Beyond DRG representatives attending DRR research meetings organised by others (for instance the *Evidence Aid Priority Setting Meeting* in 2013), the DRG has been the organiser of many workshops across a wide range of contrasting topics such as: *Tolerating the right kinds of uncertainty* (2012); *The UK National Dialogue* on the successor to the Hyogo Framework (2013); *EU Civil Protection Funding Programmes* (2014); *Integrated Research on National and Regional Disaster Risk* (2014); and *Academia and NGO Synergies for Disaster Preparedness and Response* (2015). Such events have commonly been run with other DRR focused organisations, such as those on: the *UN International Day for Natural Disaster Reduction* (2010) with the Royal Society; *Disaster risk management in the post-2015 international policy landscape* (2012), in conjunction with the Overseas Development Institute; *International coordination of disaster risk warnings* (Miami; 2012), *Building global resilience to natural hazards: translating science*

into action (Wilton Park; 2013), and *The Role of Science in Good-enough Disaster Risk Assessment* (Bogota, 2014), with the Foreign and Commonwealth Office; *Identifying concrete opportunities for further integrating science across humanitarian and development planning to support community resilience* (2013) with NERC; *Global research and innovation prioritisation* (2015) with ELRHA; *Resilience to Environmental Shocks and Change* (2018) with GCRF; and *New points of departure in transitioning disaster reduction and sustainability challenges* with UKADR.

- **Regional Research Gap Analysis** to support evidence-based policymaking. An example of this occurred shortly after the events of the 2017 Atlantic hurricane season when DRG members initiated a discussion about how the UK scientific community could better feed into the decision-making processes on small island states and in coastal regions as they recover and reconstruct following disasters. This eventually led to the funding of a Knowledge-Exchange Fellow by NERC to understand the present research landscape and the broad requirements of affected countries to support evidence-based policymaking for resilient reconstruction in the Caribbean.

C. The DRG develops and recommends processes to facilitate and sustain research uptake across multiple user communities. For instance:

- The DRG contributes-to, and **provides advice** upon, stimulation and sustenance of research uptake following delivery of UK-generated DRR-focused reports and actions. These have included: the *Humanitarian Emergency Response Review*; *the Science for Humanitarian Emergencies and Disasters report*; establishment of the *Humanitarian Emergency Expert Group*, and the (Royal Society) *Human Resilience Project*. Furthermore, it has provided advice that has shaped much of the interdisciplinary research on resilience to environmental shocks and change as part of the *Global Challenges Research Fund* (GCRF) - a £1.5 billion fund by the UK Government to support cutting-edge research addressing challenges faced by low and middle-income countries.
- The DRG encourages **operationalisation and utilisation of research**. For instance it has supported ventures including development of the Government International Forward Look (GO-Science 2015-present) that provide status reports and forecasts of potential natural hazard events. The DRG is actively exploring how it can **support innovative approaches** to utilise existing research in *Disaster Risk Finance* – for instance through use of parametric insurance schemes – and systematic syntheses of research findings to make them easily accessible to DRR policy makers.



Financing for resilience, Mumbai India.
SOURCE: Simone McCourtie/ World Bank



Weather Balloon, Africa



Investigating the factors affecting vulnerability and resilience to natural hazards
SOURCE: SHEAR

D. The DRG provides funders, research providers and users with readily accessible and relevant knowledge resources and tools for DRR. Much of the resource has come through provision of timely information and advice to decision makers responding to disasters, as well as development of databases and tools for DRG members and their associates. They have included:

- **Provision of expertise to Government**, such as to the **Science Advisory Group for Emergencies (SAGE)**, providing emergency advice to the Government Chief Scientific Advisor and Cabinet Office Briefing Room-A (COBRA) on impacts and operational options for natural hazard generated emergencies – such as the Bangkok Flooding (2011), the Gorkha Earthquake (2015), the Ecuador Earthquake (2016), and Hurricane Maria (2018).
- Provision of support to DRR data and modelling frameworks, including support for the UNDRR-sponsored **Global Risk Assessment Framework (GRAF)** (2017-present) which is improving the understanding and management of current and future risks - at all scales - to better manage uncertainties and mobilise people, innovation and finance to mitigate these. The GRAF fosters interdisciplinary systems thinking, with shared metrics and shared understanding; enable the identification of anomalies and precursor signals, as well as the correlations and dependencies of risks and actors to enable decision makers to act; provide actionable insights, tools and demonstrations at relevant scales to decision makers on a timely basis.

2. Shaping of the International DRR Landscape

The DRG has played a significant role in the development and implementation of the key UN constructs of the wider 2030 Agenda, comprising the **Sustainable Development Goals**, the **Paris Agreement** and the **Sendai Framework**. The DRG has led debate, produced and contributed to papers, as well as led meetings on all of these.

The main effort has been in **support of the Sendai Framework**, which succeeded the Hyogo Framework. The latter proved useful in providing guidance on reducing disaster risk, particularly for low-and-middle-income countries but suffered from gaps in addressing the underlying disaster risk factors. This was largely because of its lack of emphasis on drawing from science, technology and innovation, caused by a disconnected research and policy landscape, with several uncoordinated initiatives going on at the same time, often resulting in overlap and gaps. Recognising this, in 2013 the DRG brought together senior representatives of the United Nations International Strategy for Disaster Reduction (UNISDR; the predecessor of UNDRR), ISC, the United

Nations Educational, Scientific and Cultural Organisation (UNESCO), WHO and others, to agree a joint statement (the '**London Declaration**') calling for an **International Science Advisory Mechanism** to follow the successor of the Hyogo Framework.

The DRG had significant input into shaping science content of the **Sendai Framework with the vice-Chair of the Science and Technology Advisory Group** (2008-2017) and the lead of the Science and Technology Major Group (2014-2016) both being DRG members. Other members of the DRG also worked extensively on assisting in setting science goals in the Sendai Preparatory meetings (2014-2015), prioritizing and agreeing agendas between contributing science and policy organisations, across sectors (e.g. between academia and business), and between UNDRR and partner countries. Following the Sendai meeting (2015), in which the framework was ratified, DRG members were joint organisers of the main science and technical implementation meeting (Geneva, 2016) and Technical Meetings on indicators for Sendai Framework monitoring (2016, Royal Society).

Extensive DRG support for the Sendai Framework continues today. For instance a DRG member is chairing the UNDRR & ISC **Sendai Hazards Terminology and Classification project** (2019). Working with UN agencies (including WMO and WHO) and representatives of the scientific community, the insurance industry and international humanitarian organisations, the project is shaping the **all hazards** paradigm- covering man-made as well as natural hazards. This initiative will directly contribute to the Sendai Framework which calls for the science and technology community to "**Strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards**".

(left)
Hurricane Florence, Oak Island USA.
SOURCE: REUTERS/Jonathan Drake

(right)
SOURCE: OECD/ Flickr

The DRG has also sought, and focused, health, science, and technological expertise capacity within the UK to provide resources to international DRR institutions such as the IRDR International Project Office and the Special Envoy to the UN Secretary General for DRR.



Reflection

The DRG's range of outputs, continued support of members, and recognition of value by international organisations, leave little doubt that it has greatly facilitated interdisciplinary and cross-sectoral research initiatives between UK members, and partners on the world stage – even if it is difficult to provide a simple quantification of success in delivering its functions.

To the DRG members, it has been invaluable in providing relevant information:

"the DRG is the place to learn about DRR research" - Wellcome Trust

'The space for research funders, communicators of research and UK government departments engaged in DRR to update each other, align strategies and plan future collaboration' - DRG Member

It gives some coherence to the UK DRR funding landscape, which is needed as the field of research (and practice) is multi-disciplinary and diverse); in facilitating collaboration; identifying priorities for research initiatives; providing services and tools and steering international DRR research and policy. Indeed in 2016 it was named by UNISDR as one of the three globally most influential organisations (alongside the ISC and the Science Council of Japan) in influencing the scientific thrust and content of the Sendai Framework.

Why has the DRG been successful? There are two significant factors that have probably contributed to this:

- the DRG has been a low-cost, informal, neutral forum; there are no membership fees and members are not forced to participate in joint activities; members attend meetings, and engage in common ventures, because they find them useful. The DRG has always remained relevant to their interests and continued to provide a useful service to them.
- the DRG, is an interdisciplinary, cross-cutting forum which has effectively dealt with many complex systems. It has facilitated information sharing and debate that has provided space to facilitate opportunities for cross-sectoral, interdisciplinary impacts at global and regional levels.

This has not only provided opportunities to- and expanded the horizons of- members but has been highly relevant in tackling 'real-world' issues. It is interesting to consider how much recent interdisciplinary initiatives such as the GCRF have been influenced by the DRG's expansive outlook. Such instruments recognise that it is necessary to change, and broaden, our perspectives of research- not only to address increase resilience to environmental disasters – but to tackle the major societal and environmental challenges we see today.



Tristao islands Guinea
SOURCE: UN Women/Joe Saade

The Future

It is clear that the DRG remains as relevant today as it was when it was established a decade ago. The DRG will continue to support the building of coherent research collaboration across different but overlapping disciplines, sectors and policy areas in implementation of the Sendai Framework, the SDGs and the Paris agreement, the World Humanitarian Summit and Habitat III. This engagement – which may exceed its already expansive horizons, will serve to strengthen existing risk fragility and resilience frameworks for multi-hazard assessments, and develop dynamic, local, preventive, and adaptive urban and rural governance systems at global, national, and local levels. The DRG will remain responsive, flexible and dynamic.

Members should be confident that it will support them in the future as effectively it has assisted them in the past.



(top)
Disaster Risk Finance
SOURCE: NERC

(bottom)
Training to a market gardening group in
Koutoufou, Sila region, Eastern Chad.
SOURCE: BRACED



MEMBER PROFILES



Youth call out UN, world leaders on climate action.

Arts & Humanities Research Council (AHRC)



The arts and humanities play a crucial role in understanding and appreciating how cultural and historical knowledge can inform and be embedded in everyday activities and practices with regards to preparedness, response, mitigation and adaptation to both natural and man-made disasters. Some examples of what our funded projects have undertaken include:

- Interrogating postcolonial texts to challenge, reject, or reconfigure key disaster studies concepts such as resilience, risk, adaption, sustainability, and vulnerability.
- Using arts-based and creative activities to elicit information from communities about their knowledge, experiences and understandings of the risks they live with, helping to build relations of trust and reach a deeper and richer understanding of the diversity of their experiences, vulnerabilities, perceptions and responses.
- Exploring how knowledge of disaster translates between cultural and scientific experiences of risk and the extent to which cultural experience of past risk shapes future response by offering a comparative analysis of oral traditions and histories, songs, and other artistic expressions.

Civil Contingencies Secretariat (CCS)

The CCS aims to ensure that the UK and its communities remain a safe and secure place to live and work by effectively identifying and managing the risk of emergencies and improve the UK's resilience against disruptive challenges through working with others to anticipate, assess, prevent, prepare, respond and recover. CCS is a global leader in the field of risk management and emergency response and recovery.

A key focus for the CCS is supporting the Civil Contingencies Act (CCA). The threat of international terrorism and a changing climate have led to a series of emergencies and heightened concerns for the future. The Act creates a long-term foundation for civil contingencies capable of meeting these challenges at a national and a local level. It delivers a long-term national framework for civil protection fit for the challenges of the 21st Century.

CCS also develops, trains and operates the government's Cabinet Office Briefing Rooms (COBR) system for emergency

management, and is responsible for providing high quality advice to the Prime Minister, ministers and senior officials on the UK's readiness to prevent, respond and recover from major emergencies. This includes working in partnership with others in the Cabinet Office, other government departments, intelligence and other agencies, devolved administrations, the emergency services, charities, international bodies and organisation and emergency responders.



Fiji's recovery from Cyclone Winston
SOURCE: World Bank / Vlad Sokhin



Dalit community, Wayal, Nepal SOURCE: ODI



SOURCE: World Bank



Department for International Development (DFID)



Topics related to responding to climate change and disaster risk reduction are core components of UK Government policy, including the UK Aid Strategy – making it a central strand of DFID’s Strategic Direction thinking. The policy and evidence needed to inform DFID’s policy and programming choices are driven by robust and multidisciplinary research on climate change and its impacts (particularly on the most vulnerable communities).

DFID is doing valuable work around the world in this area, consistently contributing to reducing vulnerability and strengthening resilience - ranging from rural livelihoods support to regional

disaster insurance mechanisms. Interventions can also vary in scale, from global and regional level to that of communities and households. They can also focus on building disaster resilience before the shock, during a disaster response, or after an event.

In DFID, and among its partner organisations, using resilience as a concept has enabled stronger dialogue and cross-fertilisation of ideas between different disciplines and programming areas. This has in some cases strengthened the harmonisation of different kinds of programmes – especially between disaster risk reduction, social protection and climate change adaptation.

(left)
UK aid tents providing shelter for people who've lost their homes to Cyclone Idai in Mozambique
SOURCE: Flickr/DFID

(right)
Sichuan Earthquake, China
SOURCE: INRH / ESRC



Economic and Social Research Council (ESRC – UKRI)

Climate change and unequal access to health, wealth, education and resources are two of the most pressing long-term global challenges. Moreover, as they interact their negative impacts intensify. The costs of climate change increase rapidly over time, so there is an urgent need to address climate change without imposing excessive costs on the poorest communities. This urgency has generated coordinated international activity mobilised through the UN Agenda 2030, the Paris Agreement, the Sendai Framework and the New Urban Agenda.

Social science research at the individual, cultural, political and corporate level is central to successful implementation of these strategies and is needed to drive the social, structural and systemic changes that will change attitudes and behaviours. ESRC intends to deliver world-leading research to better understand these issues, find, evaluate and implement solutions, inform better choices and increase societal resilience.

Walloped by heatwave, Greenland sees massive ice melt
SOURCE: Flickr/ William Bossen

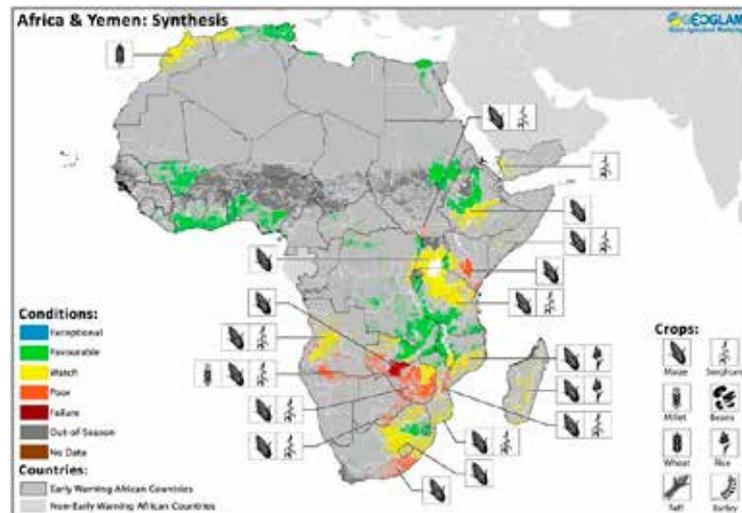


Group on Earth Observations (GEO)

The Group on Earth Observations (GEO) is an intergovernmental partnership that improves the availability, access, understanding and use of Earth observations for a sustainable planet. GEO promotes open, coordinated and sustained data sharing and infrastructure for better research, policy making, decisions and action across many disciplines.

The GEO community focuses its efforts around three global priority engagement areas: the United Nations 2030 Agenda for Sustainable Development, the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction. GEO demonstrates role of earth observations through a programme of around 70 different activities. The [GEO Highlights 2017-2018 Report](#) showcases some of the major successes.

A relevant example of this in action can be seen through GEO's Global Agricultural Monitoring Initiative which responded to a call from the United Nations Office for the Coordination of Humanitarian Affairs to produced reports on agricultural production and food security in areas of emerging concern- starting with special alerts for the agricultural impacts of drought and Cyclone Idai in southern Africa.



Government Office for Science

The Government Office for Science is home to the Scientific Advisory Group for Emergencies (SAGE), which is responsible for ensuring that coordinated scientific advice is available to decision makers in the Cabinet Office Briefing Room (COBR). SAGE aims to interpret complex or uncertain scientific evidence in non-technical language. Participation in SAGE depends on the nature of the emergency but typically involves subject experts from government, academia and industry.

SAGE has provided advice to COBR in a variety of domestic and international emergencies, including the Salisbury poisonings, the West African Ebola outbreak and the Fukushima disaster. SAGE also meets on a precautionary basis, including to assess the risk of emerging infectious diseases.



(left)
Ebola Response, DRC
SOURCE: Reuters/Jonathan Drake

(right)
A technician explains how to plan a tree for resilience, Mali
SOURCE: IRDR

Integrated Research on Disaster Risk (IRDR)

IRDR is a multi-disciplinary research programme dedicated to dealing with the challenges brought by natural disasters, mitigating their impacts, and improving related policy-making mechanisms. IRDR addresses technological and health-related events when these are consequences of natural hazards. The programme is co-sponsored by the International Science Council and the United Nations Office for Disaster Risk Reduction.

To meet its research objectives the IRDR established four core projects, comprising working groups of experts from diverse

disciplines, to formulate new methods in addressing the shortcomings of current disaster risk research including those that aim to take a systematic and critical global assessment of integrated research on disaster risk; study issues related to the collection, storage, and dissemination of disaster loss data; identify and explain the underlying causes of disasters; examine how decisions (both individually and collectively) are made in the face of risk; and monitor how DRR research aligns with the aims of the Sendai Framework, Paris Agreement and Sustainable Development Goals.

The Met Office works in partnership with the UK government, the global meteorological community, national governments and development agencies for sustainable development through worldwide delivery of weather and climate services which aid planning to protect against disasters, underpin socioeconomic growth, inform policy and help societies prepare for and adapt to the impacts of climate change.

The Met Office has funded a variety of programmes and projects that support long-term sustainable poverty alleviation and

economic development in Africa through reducing the negative impacts of climate change on poverty and growth (via the Future Climate for Africa programme); deliver transformational change in the quality, accessibility and use of weather and climate information services for sustainable development in Africa (via the Weather and Climate Information Services for Africa programme); and increase resilience to weather and climate risks through enhanced regional coordination, capacity and tools for decision driven weather and climate services (via its Asia Regional Resilience to a Changing climate programme).

Natural Environment Research Council (NERC)



Invests in research and innovation that advances understanding of environmental hazards, and the ability to plan, create policy, and manage vulnerability, risk, response and recovery in a changed and changing world. Through interdisciplinary partnerships and by bringing together outstanding researchers from different disciplines devises solutions that make people and places safer and more resilient.

Science for Humanitarian Emergencies and Resilience, (SHEAR) is a £13.5m programme funded by NERC and DFID that focuses on four areas: disaster risk assessment (mapping and analyses), sub-seasonal to

seasonal forecasting, disaster risk monitoring, and the integration of these into practical decision making. The programme is targeting low to middle income countries across sub-Saharan Africa and South Asia

Increasing Resilience to Natural Hazards in Earthquake-prone & Volcanic Regions (INRH) was a £8.3m programme funded by NERC, ESRC and National Natural Science Foundation of China (NSFC) to enhance the understanding of the physical processes behind such natural hazards, but also their effects and implications for their prediction and mitigation.



Landslide research
SOURCE: SHEAR





Overseas Development Institute



The ODI Risk and Resilience Programme undertakes cutting edge policy-oriented research on disaster risk reduction and financing. This includes a package of research, policy advice and capacity development activities to support Caribbean governments and their partners to better understand the long-term trajectories of change after disasters and promote resilient development pathways.

ODI leads several research and technical assistance projects on disaster risk financing (including forecast-based financing); disaster risk reduction in fragile and conflict settings; and on intersectional approaches to disaster risk reduction and climate change adaptation.

ODI work on anticipatory action has defined the field of practice, promoted use of evidence in the design and implementation of forecast-based early action initiatives and enhanced understanding the different approaches being adopted. This has led to a

number of significant efforts to scale up forecast-based early action including through the UN Central Emergency Response Fund, CERF.

Funded by a NERC Knowledge Exchange Fellowship, Dr Emily Wilkinson was appointed Chief Scientific Adviser to the Climate Resilience Execution Agency for Dominica (CREAD) in April 2019. She helped CREAD develop the National Climate Resilience and Recovery Plan, which was approved by the Government of Dominica.

(left)
PAGER-O Project, art and sciences for disaster risk resilience in China. SOURCE:

(right)
Rohingya refugee, Bangladesh. SOURCE: USAID / Ashique



Public Health England (PHE)

PHE's mission is to protect the nation from public health hazards, prepare for and respond to public health emergencies, improve the health of the population by sharing resources, identify and prepare for future public health challenges and research, collect and analyse data to improve understanding of public health challenges, and develop solutions to public health problems. PHE also supports the implementation of international agreements relating to public health including the Sustainable Development Goals, the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction.

PHE undertakes a wide range of activities which support the Sendai Framework priorities. At the local and national levels, PHE supports

work in directing and facilitating emergency planning (as a Category 1 Responder under the Civil Contingencies Act), government assessments of the likelihood and impact of various civil emergency risks (via the National Risk Register of Civil Emergencies), and the development of national and local disaster risk reduction strategies. At the regional and global levels, PHE supports emergency and health protection preparedness programmes (through its housing of the WHO Collaborating Centre on Mass Gatherings and Global Health Security), emergency response to tackle outbreaks of disease (via the UK Public Health Rapid Support Team), and knowledge transfer to facilitate implementation of the Sendai Framework (through their Global Disaster Risk Reduction team).

The Royal Society



The Royal Society is the independent scientific academy of the UK and the Commonwealth. Our aim is to recognise, promote and support excellence in science, and to encourage the development and use of science for the benefit of humanity.

Our 2014 report Resilience to Extreme Weather considered how physical and social interventions could limit the damage from extreme events to build more resilient communities. Since then the Society has undertaken a number of pieces of work relating to climate change and adaptation, including a series of workshops with the Foreign and Commonwealth Office, on the implications of climate change and extreme weather for diplomacy.

The International Partnership Programme (IPP) has so far grant-funded 11 disaster resilience projects to the tune of ~£40M. These use space technology (Earth observation, satellite communications, and Global Navigation Satellite Systems) to support actions to increase the resilience to disasters, risks and climate change by:

- improving the understanding of disaster risk and accuracy of disaster predictions;
- strengthening developing country governments' planning and prioritisation of disaster response;
- supporting more robust insurance markets through improved calculations of risk;
- enhancing preparedness for effective response through improved emergency communications.

Philippines: IPP-funded SatComs tools have aided in a diverse range of situations, from family tracing in disaster aftermath to facilitating identification of the recovered bodies of landslide victims, and even in the rescue of a human trafficking victim.

Malaysia: The EASOS marine watch tool has helped to identify and map the trajectory of 3 oil spills, improving the response to and policing of marine pollution. Clean-up costs saved by early intervention are estimated to be over £1.5 million each in 2 spills identified.

Fiji, Solomon Islands and Vanuatu: The CommonSensing project is using satellite climate data to support Small Island Developing States to set new standards for requesting and reporting climate funds, to strengthen national and regional climate action policy, and to increase resilience to natural disasters.



Cyclone Idai

UK Alliance for Disaster Research (UKADR)



African Duststorm
SOURCE: SNRS / Francoise Guichard



Afar Regional State.
SOURCE: UNICEF Ethiopia / Flickr

The primary motivation for the UKADR is to bring together the UK's rich and diverse disaster research community. This facilitates collaboration and partnership to aid representation of the research community at government level in the UK, and, where appropriate, help with the implementation of the Sendai Framework for Disaster Risk Reduction. The Alliance is independent and managed by voluntary contributions from the UK research community. Membership is open to staff and PhD students of any research-and-capacity-building institute based in the UK that is active in researching disaster risk and its management. This includes universities and other educational institutions, charitable trusts, think tanks and research departments within government agencies, private businesses or civil society organisations.

UKADR provides a national contact point for international efforts to coordinate scientific efforts to reduce the global impacts of disaster. It collaborates with other international agencies engaged in supporting Sendai. These include: International Council for Science (ISC), UNISDR-sponsored programme on Integrated Research on Disaster Risk (IRDR) and Global Alliance of Disaster Research Institutes (GADRI).

To date the UKADR has been fulfilling its aims through incremental involvement in helping to steer UKRI GCRF calls including through short review studies and a joint workshop, providing an impetus to the establishment of other regional Alliances – e.g. North American Alliance, African Alliance and European Alliance, also in collaboration with GADRI, and in establishing a conference series.

Wellcome

Wellcome is a core contributing member of UKADR, which runs the DRG. As a health research funder, Wellcome devotes substantial funding to global health research, both in the UK and in developing countries. Capacity-building in Africa is a particular focus area. Wellcome is also a founding funder of the Research for Health in Humanitarian Crises (R2HC) funding scheme run by Elrha, which aims to improve health outcomes for people affected by humanitarian crises by strengthening the evidence base for public health interventions. This includes funding research related to health in disaster contexts.





*Ethiopia, food resilience training
SOURCE: ODI / Beatrice Mosello*



UK Collaborative on
Development Research