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Heritage for Global Challenges

A Research Report by PRAXIS: Arts and Humanities for Global Development

PRAXIS

PRAXIS focuses on Arts and Humanities research across the Global Challenges Research Fund (GCRF) and Newton Fund portfolio. Specifically, its aims are to consolidate learning across research projects funded by the Arts and Humanities Research Council (AHRC), to amplify their impact and policy relevance, and to champion the distinctive contribution that Arts and Humanities research can make to tackling urgent development challenges.

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Foreword

In the past few years the Arts and Humanities Research Council (AHRC) has recognised the value and importance of heritage research for global challenges and placed heritage at the forefront of its global research strategy. Heritage research is an exciting, innovative, and highly collaborative field that crosses multiple disciplines. It draws on knowledge and expertise from across the arts and humanities as well as connecting with developments in science, technology, and practice, leading to significant wider impacts and benefits both within the heritage sector and beyond. This places heritage research in a vital role for contributing to global development challenges, which is the focus of this timely report.

The report provides a deep dive into AHRC's portfolio of nearly 100 heritage-based Global Challenges Research Fund (GCRF) and Newton Fund projects, providing analysis of how heritage research has, through a range of approaches and through increasing collaboration between researchers across high and low income contexts, addressed complex development challenges in areas including, among others, poverty alleviation, disaster response and resilience, adaptation to climate change, gender equality, and balancing heritage conservation and development.

The report reflects AHRC's broad view of cultural heritage, incorporating, for example, the tangible, intangible, digital, intellectual, artistic, and the connections between them. Using a case study approach, the report provides a series of snapshots that highlight not only the value and importance of heritage research for global challenges but also the wide range of methods, approaches, and innovations that projects have employed. Finally, the report highlights some important lessons as well as future challenges for the field of heritage and for AHRC's strategic leadership in this area. While work remains to be done, this report recognises the role of heritage research at the heart of global transformation and development and therefore as remaining integral to AHRC's global research agenda.

— Professor Edward Harcourt, *Director of Research, Strategy and Innovation, Arts and Humanities Research Council*

The report *Heritage for Global Challenges* is essential reading for researchers, policy makers, and practitioners to help understand the ongoing contribution of heritage towards the achievement of the 17 Sustainable Development Goals (SDGs) or 'Global Goals'.

UNESCO is the only United Nations agency with a mandate for culture and was instrumental in ensuring that the vital role of culture in achieving sustainable development was formally recognised in the international development agenda. Notably, the *Heritage for Global Challenges* report and its recommendations significantly build on the point made in the UK National Commission for UNESCO report, *Cultural Heritage Innovation – Opportunities for International Development*; that the role of cultural heritage is not fully recognised in the SDGs and associated targets. The *Heritage for Global Challenges* report goes some way to addressing this gap by making connections between a wide range of cultural heritage research projects that seek to address multiple SDG targets.

In 2021, we are within the ten-year Decade of Action to deliver the SDGs by 2030. Since the SDGs were agreed, change is accelerating, not only due to the impact of COVID-19, but also as a result of challenges such as national and regional conflicts and threats to democracy from growing populism and nationalism, disinformation and the growth of social media and surveillance via information technology and artificial intelligence. These multi-layered threats bring with them specific threats for cultural heritage including the destruction of heritage sites and increasing disconnection between local communities and their heritage.

UN Secretary-General, António Guterres, reflecting on the causes and uneven impacts of the COVID-19 crisis in the most recent UN SDG report, emphasises how the pandemic reinforces the significance of agreements such as the 2030 Agenda, the Paris Agreement on Climate Change, and the Addis Ababa Action Agenda and strengthens the case for internationally coordinated responses guided by the SDGs. Understanding and valuing heritage is integral to achieving the aims of these agreements and to building more equal, inclusive, and sustainable economies and societies. The analysis and recommendations included in *Heritage for Global Challenges* provide an important repository of evidence to strengthen the case for the role of cultural heritage in achieving progress towards these aims and the 'Global Goals'.

— James Ömer Bridge, *Secretary-General of the UK National Commission for UNESCO*

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Acronyms and Abbreviations

A&H:	Arts and Humanities
AHRC:	Arts and Humanities Research Council
BIM	Building Information Modelling
CHCfE:	Cultural Heritage Counts for Europe
Co-I:	Co-Investigator
ESRC:	Economic and Social Research Council
FAO:	Food and Agriculture Organization of the United Nations
GCRF:	Global Challenges Research Fund
GIS:	Geographic Information System
GNI:	Gross National Income
GTR:	Gateway to Research, the UKRI online gateway to publicly funded research and innovation
ICD:	Integrated Community Development
ICOMOS:	International Council on Monuments and Sites
IFAD:	International Fund for Agricultural Development
IDP:	Internally Displaced People
LDCs:	Least Developed Countries
LMICs:	Low- and Middle- Income Countries
MCH:	Marine Cultural Heritage
MRC:	Medical Research Council
NERC:	Natural Environment Research Council
NGO:	Non-Governmental Organisation
ODA:	Official Development Assistance
PI:	Principal Investigator

Ref.:	Project(s) Reference Number
SIDS:	Small Island Developing States
SDGs:	Sustainable Development Goals
SOAS:	School of Oriental and African Studies
UK:	United Kingdom
UKRI:	UK Research and Innovation
UN:	United Nations
UNESCO:	United Nations Educational, Scientific and Cultural Organisation
UNICEF:	United Nations Children's Fund
UNISDR:	United Nations Office for Disaster Disk Reduction
VR:	Virtual Reality
WH:	World Heritage
WHO:	World Health Organisation
WFP:	World Food Programme

Executive Summary

In recent decades, tangible and intangible heritage has been widely recognised as not only important in its own right but also as an enabler and driver of sustainable development. International organisations working in the field, UNESCO in particular, have emphasised the role of heritage in addressing global challenges, from climate change to environmental degradation, disease and poor health, inadequate access to clean water and healthy food, conflict, education, and gender equality. Yet heritage remains largely absent from the most recent international development agenda (2030 Agenda), adopted by the United Nations (UN) in 2015 and ratified by 193 countries. The 17 Sustainable Development Goals (SDGs) and 169 targets proposed in the 2030 Agenda do not fully capture the central role of heritage in achieving a holistic, human rights-based, environmentally sustainable, and inclusive development. This report aims to address this gap but also to demonstrate the relevance of research to exploit the full potential of tangible and intangible heritage to tackle global challenges and to foster sustainable development.

The qualitative and quantitative analysis presented in this report demonstrates how the intricate and multi-faceted challenges faced by developing countries in particular can be addressed through heritage research. The report examines 87 Arts and Humanities projects funded by the UK's Global Challenges Research Fund (GCRF) and the Newton Fund, for the most part by the Arts and Humanities Research Council and implemented in 49 countries (timeframe varies from 2014 to 2022). 42 UK research institutions worked in collaboration with more than 200 global partners to deliver cutting-edge research to address urgent global developmental challenges around the globe, thereby supporting the UK's Official Development Assistance (ODA) commitment. The report's mixed method analysis involved a desk-assessment of project data available on the UK Research and Innovation (UKRI) Gateway for Research, interviews with more than thirty principal investigators, co-investigators, and partners. A number of 'Learning Events' (see Annex 6 and Annex 7, and a major conference: entitled 'Heritage for Global Challenges' (24–26th February 2020, West Bek'aa, Lebanon, see Annex 8), also contributes to this report. In bringing together researchers, film makers, policymakers, and funders, the conference provided opportunity for these stakeholders to discuss the role of heritage in addressing

the SDGs from a variety of perspectives and to collaboratively define a future research agenda.

This report highlights how the multi-faceted nature of heritage (tangible and intangible, cultural and natural) can be effectively mobilised by research projects to foster innovative, interdisciplinary, inclusive, human-centred, transformative, and long-term developmental approaches towards sustainable development. Chapter 1 relates the heritage research projects to twelve thematic clusters which are centred around a specific global challenge, such as gender equality, adaptation to climate change, or food security and sustainable agriculture, and a series of SDGs (see Annex 2). In doing so, this chapter provides evidence for how heritage research projects contribute to each respective thematic cluster in specific ways. 21 short 'Focus' case studies are highlighted in this section to showcase examples of practical implementation and research impacts. Chapter 2 presents 11 challenge-led case studies that spotlight key research findings, outputs, impacts and successful stories with a cross-cutting approach across different thematic clusters and the SDGs. These 11 case studies were selected to represent different forms of heritage (tangible and intangible) and different types and levels of funding (GCRF, Newton, Network +, Follow-on, etc.) across different geographical regions that each hold their own challenges within their respective contexts.

Chapter 3 focuses on a series of cross-cutting themes and presents successful practices and lessons learnt. These include: use of A&H methodologies and the (co-)production of creative outputs; the implementation of interdisciplinary and intersectoral approaches; cultural and place sensitivity; the promotion of inclusive, participatory, and decolonised research; contribution to capacity strengthening and empowerment; the dissemination of the research findings and raising awareness of heritage preservation, management, and enhancement (see also Annex 3); the promotion of knowledge exchange, networks, and equitable partnerships; and influence on policy, planning, and decision-making. Finally, a series of future recommendations and potential research areas are suggested in The Way Forward. These suggestions are intended to maximise the potential of heritage research for international development and the operationalisation of the SDGs on the ground.

The COVID-19 global pandemic has re-emphasised the imperative to transform our development models towards more holistic, interdisciplinary, and sustainable approaches, putting human beings at the centre. The goal of the report is to foreground the role of heritage and heritage research for sustainable development and to inform a wide audience of stakeholders, including UK and overseas academics and practitioners, funding bodies, governments and decision-makers, development agencies, and NGOs. The report makes the case for heritage and heritage research as indispensable in our efforts to achieve the SDGs. We hope this report will encourage more meaningful, people-centred, and long-term collaboration between universities, third-sector partners, and local communities to achieve the goal that we all share of making the world a safer, more equitable, and more liveable home for everyone.

Figure 1. Researchers, practitioners, policymakers, and funders discussing heritage's contribution to global challenges during the PRAXIS Nexus Event 'Heritage for Global Challenges' (24–26th February 2020, West Bek'aa, Lebanon).

Introduction

Heritage, Global Challenges, and Sustainable Development

Heritage, and culture in general, plays a central role in addressing the complexity and broad variety of global development challenges, ranging from environmental degradation, refugee and humanitarian crisis to extreme poverty, food insecurity, persisting inequalities, and unsustainable urbanisation, just to mention some examples. The outbreak of COVID-19 has exacerbated these worldwide challenges even more, substantially affecting people's lives in many different ways.

Historically, heritage has been considered an obstacle to development; reduced to an element to be merely 'protected' and transformed into a museum artefact. However, the second half of the 20th century saw the arrival of a new international perspective recognising the interdependency and synergies between culture and development, mainly led by the work of UNESCO (Bandarin, Hosagrahar, and Sailer Albernaz 2011; Wiktor-Mach 2019). The relevance of heritage (and culture) as an enabler and a driver of sustainable development has received greater attention in the last two decades and it has now been widely recognised by the main international cultural organisations working in this field (British Council 2020; Culture2030Goal campaign 2019; Council of Europe 2017; CHCfE Consortium 2015; United Nations 2014; UNESCO 2013; ICOMOS 2011; United Cities and Local Governments 2004). Culture has also received recognition as a fourth pillar of sustainable development, in addition to its social, environmental, and economic dimensions (United Cities and Local Governments 2010; Nurse 2006; Hawkes 2001).

Nevertheless, the potential of harnessing heritage to address global challenges has remained largely under-represented and underestimated in the most recent international development agenda (2030 Agenda) adopted by the United Nations (UN) in 2015. Among the 17 Sustainable Development Goals (SDGs) and 169 associated targets established by the 2030 Agenda (see Focus 1), only target 11.4 explicitly mentions heritage, stating that efforts should be strengthened 'to protect and safeguard the world's cultural and natural

Figure 2. The UN Sustainable Development Goals.

heritage' in order to make our cities safe, resilient, and sustainable (United Nations 2015). This global target continues to reflect a rather limited approach to heritage for development. The 2030 Agenda also envisages broader approaches calling for culture's contribution to sustainable development to ensure inclusive and quality education (target 4.7), to promote sustainable tourism and the creation of decent employment and economic inclusive growth (target 8.3 and 8.9), and to ensure sustainable consumption and production patterns generated by tourism (target 12.b). However, the international development framework of the SDGs, agreed and adopted by 193 countries, was not able to fully capture the central role of heritage in achieving a holistic, human rights-based, environmentally sustainable, and inclusive development.

Focus 1. List of UN Sustainable Development Goals (SDGs)

- SDG 1 – End poverty in all its forms everywhere
- SDG 2 – End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- SDG 3 – Ensure healthy lives and promote well-being for all at all ages
- SDG 4 – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG 5 – Achieve gender equality and empower all women and girls
- SDG 6 – Ensure availability and sustainable management of water and sanitation for all
- SDG 7 – Ensure access to affordable, reliable, sustainable and modern energy for all
- SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- SDG 9 – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- SDG 10 – Reduce inequality within and among countries
- SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable
- SDG 12 – Ensure sustainable consumption and production patterns
- SDG 13 – Take urgent action to combat climate change and its impacts
- SDG 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- SDG 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- SDG 16 – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- SDG 17 – Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

PRAXIS: Arts and Humanities for Global Development

The COVID-19 global pandemic reinforces the imperative to rethink and transform our development models. At PRAXIS, we strongly believe that Arts and Humanities (A&H) research has a crucial role to play in 'building back better' and promoting a more sustainable future. This report on Heritage for Global Challenges recognises the relevance of harnessing heritage, and heritage research, for tackling global challenges and as a driver of international development and a decisive enabler for meeting each of the 17 SDGs. The report highlights how the multi-faceted nature of heritage (tangible and intangible, cultural and natural) and its robust interlinkage with communities and places can be effectively mobilised by research projects to foster innovative, interdisciplinary, inclusive, transformative, and long-term developmental approaches toward sustainable development. The report provides evidence to support this standpoint through a qualitative and quantitative analysis of 87 A&H research projects funded by the Global Challenges Research Fund (GCRF) and the Newton Fund (see Focus 2).

The Newton and GCRF funds were established in 2014 and 2015, respectively, to fund research for development, as part of the UK's Official Development Assistance (ODA) commitment of 0.7% of GDP. The research projects selected for this study have been implemented by 42 UK research institutions in collaboration with more than two hundred global partners from 49 countries, with a timeframe that varies from 2014 to 2022. These projects have engaged with different forms of heritage to tackle global challenges in 43 least developed (LDCs) and low-and middle-income (LMIs) countries. The goal of the report is to inform UK and overseas academics and practitioners, funding bodies, governments and decision-makers, heritage and non-heritage sector organisations, development agencies, local and international NGOs, and, generally, all those interested in heritage and sustainable development. In doing so, the report aims to highlight the relevance of heritage research for tackling global challenges among key stakeholders and to support the integration of future research priorities and recommendations into their current and future activities, funding streams and long-term strategies. It also aims to help A&H researchers to demonstrate the value of their research for tackling global development issues and the SDGs, providing concrete evidence for 'what works' and

relating to common challenges encountered across different projects, and to stimulate new ideas for future research questions. We hope the wide dissemination of this report will provide a broader understanding of the invaluable contribution of cultural heritage for sustainable development and encourage even more meaningful, people-centred, and long-term impacts in the UK, ODA countries, and worldwide.

The contribution of heritage research to international (sustainable) development is highlighted in Chapter 1, which collates learning from a variety of GCRF and Newton projects in relation to twelve thematic clusters, each one addressing a specific global challenge and associated SDGs. Chapter 1 also includes highlights from a total of 21 research projects demonstrating practical implementation and impacts, followed by final section discussing the interconnection between heritage research for international development and the SDGs. Chapter 2 presents eleven challenge-led case studies implemented all over the world, showcasing key findings, outputs, impacts, and successful stories with a transversal approach across different thematic clusters. Chapter 3 discusses the challenges and lessons learnt from the design and implementation of this wide range of ground-breaking research projects, identifying both specific and cross-cutting aspects of heritage research for tackling global challenges. Based on this reflective and collective experience, a concluding section proposes a possible way forward through the identification of constructive recommendations and future research areas.

Focus 2. Global Challenges Research Fund (GCRF) and Newton Fund

From 2014, the Global Challenges Research Fund (GRCF) and Newton Fund have supported cutting-edge research focused on the least developed (LDCs) and low- and middle-income (LMIs) countries all around the globe. Both funds are part of the UK's ODA (Official Development Assistance) commitment, which is monitored by the Organization for Economic Cooperation and Development (OECD) and its Development Assistance Committee (DAC). Both funds require collaboration between UK academics and institutions with overseas partners.

The Newton Fund was launched in 2014 with a UK investment of £735 million up to

2021 to promote economic development and social welfare in ODA countries, and to develop research and innovation partnerships between these countries and UK institutions. Collaboration with at least one of the 17 ODA-country partners[i] is considered a fundamental requirement to meet national and local development priorities. The Fund focuses on the following three areas of activity:

- People: Increasing capacity in science and innovation, individually, and institutionally in partners countries;
- Research: Research collaborations on development topics;
- Translation: Creating collaborative solutions to development challenges and strengthening innovation systems.

The GCRF was established in 2015 with a budget of £1.5 billion fund to support international development research, directly contributing to inclusive sustainable development in LDCs and LMICs. It focuses on three main challenge areas:

- Equitable Access to Sustainable Development
  - Secure and resilient food systems supported by sustainable marine resources and agriculture
  - Sustainable health and wellbeing
  - Inclusive and equitable quality education
  - Clean air, water and sanitation
  - Affordable, reliable, sustainable energy
- Sustainable Economies and Societies
  - Sustainable livelihoods supported by strong foundations for inclusive economic growth and innovation
  - Resilience and action on short-term environmental shocks and long-term environmental change
  - Sustainable cities and communities
  - Sustainable production and consumption of materials and other resources
- Human Rights, Good Governance and Social Justice.
  - Understand and respond effectively to forced displacement and multiple refugee crises
  - Reduce conflict and promote peace, justice and humanitarian action
  - Reduce poverty and inequality, including gender inequalities

[i] The list includes the following countries: Brazil, Chile, China, Colombia, Egypt, Mexico, Philippines, South-Africa, Thailand, Turkey, Vietnam, India, Indonesia, Jordan, Kenya, Malaysia, and Peru.

Research Design and Methodology

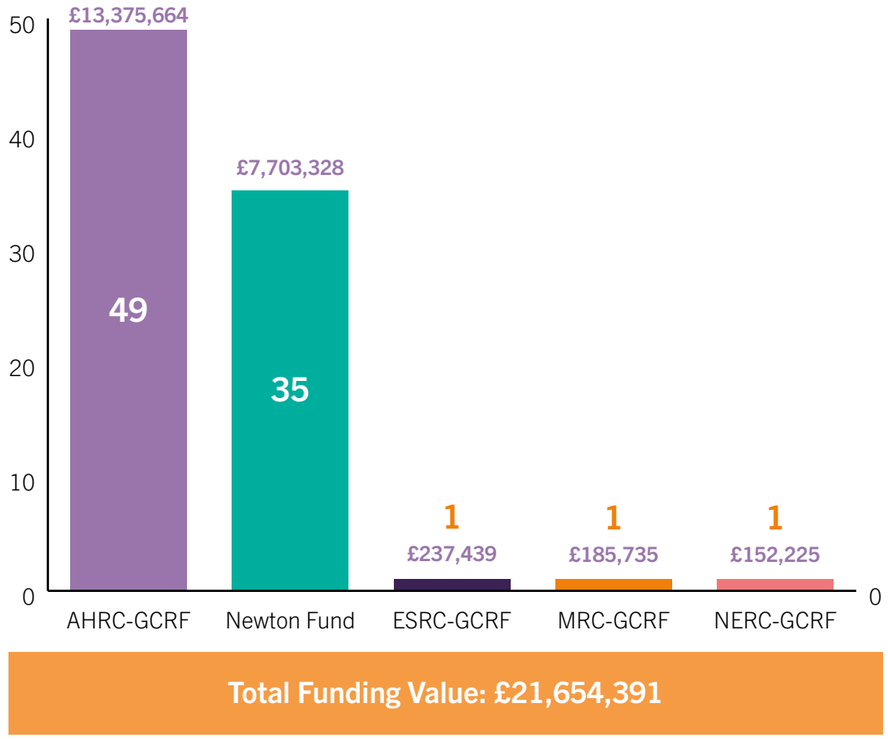
GCRF and Newton funded projects are particularly relevant for an analysis of this kind as they have supported cutting-edge research to address urgent global developmental challenges in LDCs and LMI countries all around the globe as part of UK's Official Development Assistance (ODA) commitment. The collaboration and partnership between UK researchers and institutions with overseas colleagues, governments, NGOs, and other organisations was a grant requirement, but also a crucial element for addressing the intricate and multi-faceted challenges encountered by these countries. The Arts and Humanities Research Council (AHRC) has played a crucial role in this funding framework. More than 250 GCRF awards and £83 million were allocated by AHRC to A&H research for international development, including collaborative programmes with other research councils (e.g. with Natural Environment Research Council-NERC on Resilience, with Economic and Social Research Council-ESRC on Forced Displacement, and with the Medical Research Council-MRC on Global Public Health). More than 50 Newton awards reached a total of £3 million. In addition, AHRC funded well over 50 other A&H projects in ODA countries with other types of funding. A&H approaches and methodologies can also be found in a multiplicity of projects funded through GCRF and Newton by other delivery partners (e.g. other Research Councils, the British Academy, and the Scottish Funding Council among others), as well as in projects funded through the UK Research and Innovation (UKRI) collective calls, including 'Growing Research Capability' and the 'Interdisciplinary Research Hubs to Address Challenges Faced by Developing Countries'. However, this study focuses on a selection of 87 GCRF and Newton funded projects on heritage to limit the scope of the analysis and to guarantee the feasibility of completing the research project within its timeframe (January 2020 – January 2021).

The research sample includes 52 GCRF projects (49 funded by AHRC, one by ESRC, one by MRC, and one by NERC) and 35 Newton projects. The full list of research projects, including basic data (title, lead institution, Principal Investigator, Co-Investigators, partners, type of fund and value, location) and their reference number, which is used to mention projects all over this report, is available in Annex 1. Projects were identified through category and keyword searches on Gateway to Research, the UKRI online gateway to publicly funded research and innovation, which provides data on GCRF and Newton funded projects. These online searches were complemented by in-depth conversations with GRCF Challenge Leaders, Portfolio Managers, Principal Investigators (PIs), Co-investigators (Co-Is), and partners through an iterative process and including ongoing communication with AHRC. This cohort-building process facilitated the identification of further projects and supported PRAXIS in conceptualising collaborative learning workshops on heritage. During 2019–20, PRAXIS hosted two Learning Events, on 'Heritage and Policy' (10th December 2019, University of Leeds, UK, see Annex 6) and 'Food and Heritage' (8th January 2020, University of Leeds, UK, see Annex 7). In addition, the Nexus Event 'Heritage for Global Challenges' (24-26th February 2020, West Bek'aa, Lebanon, see Annex 8) brought together more than 50 researchers, film makers, policymakers, and funders to discuss this topic from a variety of perspectives, engaging with a wide range of global challenges, discussing heritage's contribution to each SDG and collaboratively defining a future research agenda to move forward. These conversations and events provided useful insights for this report and have demonstrated a strong interest on the part of researchers, funding bodies, policymakers, and cultural institutions in conducting this kind of interdisciplinary and cross-cutting research.

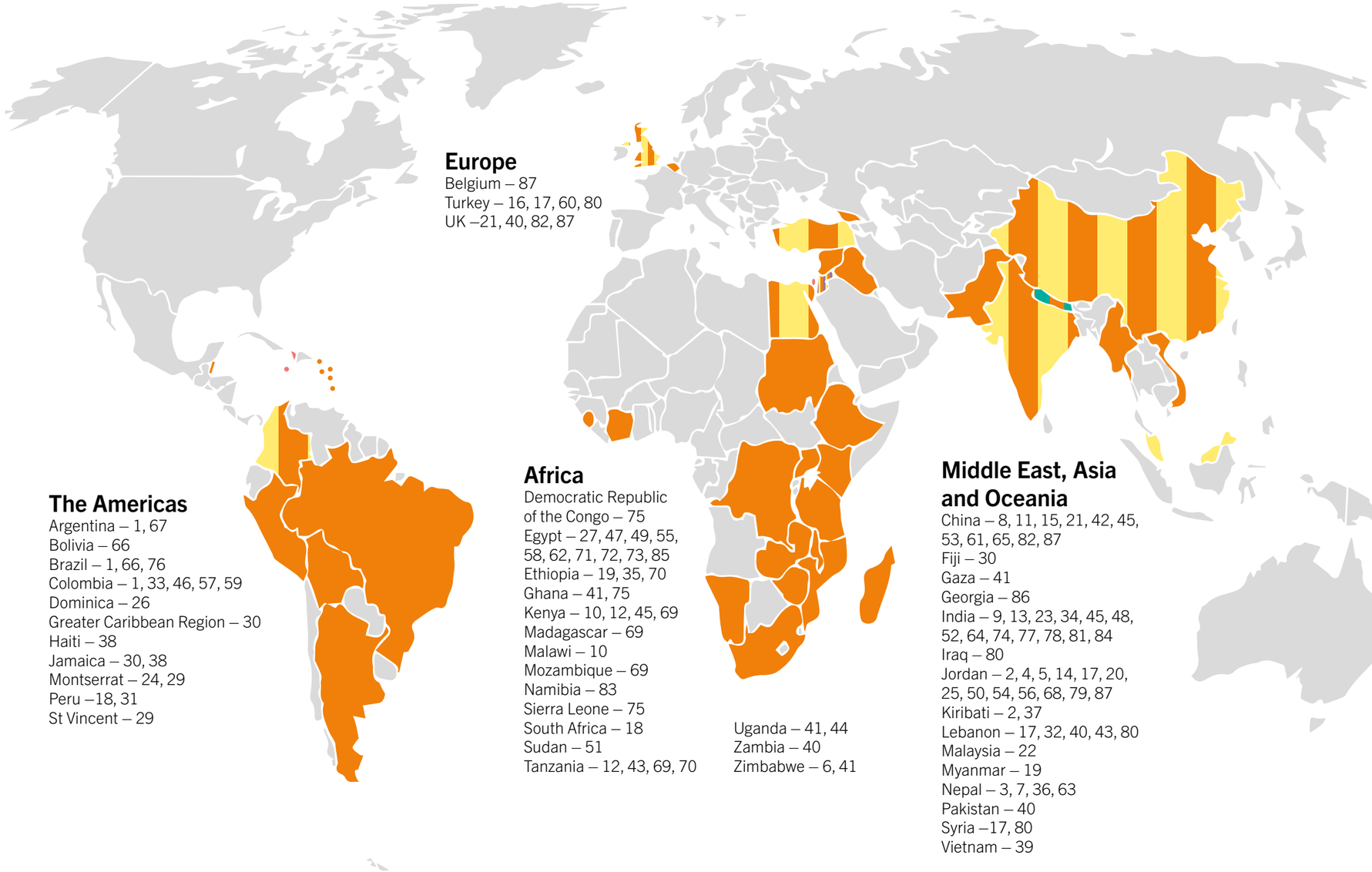
Practically, GCRF and Newton projects have been quantitatively and qualitatively analysed through a desk-assessment of project data available on UKRI Gateway to Research, including abstracts, research outputs, and engagement activities, key findings and impacts, collaborations and partnerships, and additional funding. A survey on Heritage for Global Challenges (see Annex 5) was conducted with project PIs, Co-Is, and partners. In-depth interviews were also carried out with 34 of them to collect additional information regarding the design, implementation, challenges, and future opportunities related to their research projects (see Annex 4). Finally, a draft of the report was shared with all PIs

for a final round of consultations before its final release. We would like to thank all the academics, practitioners, and organisations who have contributed for their invaluable contributions and inputs. A special thanks to the AHRC for their support throughout.

Infographic 1. Number of Heritage Research Projects per Type of Funding (including Funding Value)



Infographic 2. Worldwide Distribution of Heritage Research Projects



Europe
Belgium – 87
Turkey – 16, 17, 60, 80
UK –21, 40, 82, 87

The Americas
Argentina – 1, 67
Bolivia – 66
Brazil – 1, 66, 76
Colombia – 1, 33, 46, 57, 59
Dominica – 26
Greater Caribbean Region – 30
Haiti – 38
Jamaica – 30, 38
Montserrat – 24, 29
Peru –18, 31
St Vincent – 29

Africa
Democratic Republic of the Congo – 75
Egypt – 27, 47, 49, 55, 58, 62, 71, 72, 73, 85
Ethiopia – 19, 35, 70
Ghana – 41, 75
Kenya – 10, 12, 45, 69
Madagascar – 69
Malawi – 10
Mozambique – 69
Namibia – 83
Sierra Leone – 75
South Africa – 18
Sudan – 51
Tanzania – 12, 43, 69, 70
Uganda – 41, 44
Zambia – 40
Zimbabwe – 6, 41

Middle East, Asia and Oceania
China – 8, 11, 15, 21, 42, 45, 53, 61, 65, 82, 87
Fiji – 30
Gaza – 41
Georgia – 86
India – 9, 13, 23, 34, 45, 48, 52, 64, 74, 77, 78, 81, 84
Iraq – 80
Jordan – 2, 4, 5, 14, 17, 20, 25, 50, 54, 56, 68, 79, 87
Kiribati – 2, 37
Lebanon – 17, 32, 40, 43, 80
Malaysia – 22
Myanmar – 19
Nepal – 3, 7, 36, 63
Pakistan – 40
Syria –17, 80
Vietnam – 39

Fund
- MRC-GCRF
- AHRC-GCRF
- Newton
- ESRC-GCRF
- NERC-GCRF

Please see **Annex 1** for list of projects as referenced on the map.

"We are meeting at a time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth, and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiralling conflict, violent extremism, terrorism, and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation (…) exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. (…). The survival of many societies, and of the biological support systems of the planet, is at risk. It is also, however, a time of immense opportunity. Significant progress has been made in meeting many development challenges. Within the past generation, hundreds of millions of people have emerged from extreme poverty. Access to education has greatly increased for both boys and girls. The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy". *United Nations 2015, Art. 14*

Chapter 1. Heritage Research, Global Challenges, and Sustainable Development: A Thematic Analysis

This chapter discusses how different forms of heritage have been harnessed by GCRF and Newton research projects to tackle a wide range of contemporary global challenges and SDGs (see Infographic 3). As already mentioned in the Introduction, heritage is not simply an asset related to the past and frozen in time. Heritage is a living and dynamic concept, interwoven with peoples and places, an expression of cultural diversity and of different modalities of 'artistic creation, production, dissemination, distribution and enjoyment, whatever the means and technologies used' (UNESCO 2005, Art. 1). Heritage encompasses tangible objects, such as monuments and historic buildings, movable and immovable sculpture and paintings, cave dwellings, underwater heritage; and also cultural landscapes in rural and urban contexts, natural areas, ecosystems, and biodiversity (UNESCO 1972, Art. 1; 2008, Annex 3). It further consists of intangible attributes, including: 'oral traditions and expressions, language as a vehicle of the intangible cultural heritage, performing arts, social practices, rituals and festive events, knowledge and practices concerning nature and the universe, traditional craftsmanship' (UNESCO 2003, Art. 2; 2005, Art. 4-5). These intangible attributes in turn can become cultural industries where they are able to produce and distribute goods and services.

This chapter reflects on the contribution made by diverse research projects in relation to the different developmental challenges, for example gender equality, adaptation to climate change, or food security and sustainable agriculture. Heritage research projects are grouped into twelve thematic clusters[1] reflecting the most relevant global challenges, SDGs, and related targets they have addressed (see Table 1). The classification of these projects in relation to each thematic cluster is available at the beginning of their related section and the SDG(s) tackled by each research project are presented in Annex

1 The classification of heritage projects into specific thematic clusters and SDGs was made by the author in relation to most relevant findings and key aspects that emerged from the qualitative data analysis carried out. However, the author is aware that this classification is a simplification made on the basis of data availability and that the multi-faceted and interdisciplinary nature of heritage research projects make it challenging to group them exclusively in relation to specific thematic clusters and SDGs and not others. The challenges that research projects have tackled are frequently more complex and interconnected, including minor and indirect challenges that could not clearly emerge from this classification.

2. Furthermore, this chapter highlights how GCRF and Newton research projects have been able to promote a different, multi-faceted, holistic, and interdisciplinary approach to development, putting heritage and human beings at the centre. Specifically, they have fostered a 'development, understood not only in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence' (UNESCO 2001, Art. 3). The projects have shown how heritage has a strong correlation with people and allows us to connect past, present, and future by engaging in difficult conversations, including: about uncomfortable pasts, from slavery to conflict; about our relationships with communities, groups, and individuals (especially those who are often excluded and the most marginalised); and with our places and environments. These projects illuminate the challenges of inequality, injustice, and exploitation in the present, and thereby develop new visions for the future.

"Culture, in all its dimensions, is a fundamental component of sustainable development. As a sector of activity, through tangible and intangible heritage, creative industries and various forms of artistic expressions, culture is a powerful contributor to economic development, social stability, and environmental protection. As a repository of knowledge, meanings and values that permeate all aspects of our lives, culture also defines the way human beings live and interact both at local and global scales". *UNESCO 2010, p. 2*

Figure 3. The elaborately decorated lacquerware factory in the ancient city of Pingyao. Project: 'Located Making: Unlocking the Potential of Cultural Heritage by Design' (ref. 53). Photograph by Stuart Walker with permission.

Moreover, GCRF and Newton projects have enhanced North-South and South-South regional and international cooperation through capacity-building and have formed multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology, and financial resources, including through public, public-private and civil society partnerships (see Chapter 3). It is worth mentioning that the totality of the research projects has contributed to address SDG 10 (target 10.b)[2] and SDG 17 (targets 17.2,[3] 17.6,[4] 17.9,[5] 17.16[6] and 17.17[7]) and they have provided Official Development Assistance to 43 LDCs and LMICs. Nevertheless, this chapter places emphasis on the fact that the challenges facing societies and individuals across the globe are often complex, multi-faceted, and interconnected, cutting across several thematic clusters and SDGs (see Infographic 4), and it identifies existing challenges and gaps.

2 Target 10.b: Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes.

3 Target 17.2: Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries.

4 Target 17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.

5 Target 17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation.

6 Target 17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.

7 Target 17.17: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

Infographic 3. Type of Heritage Taken into Consideration by the GCRF and Newton Research Projects

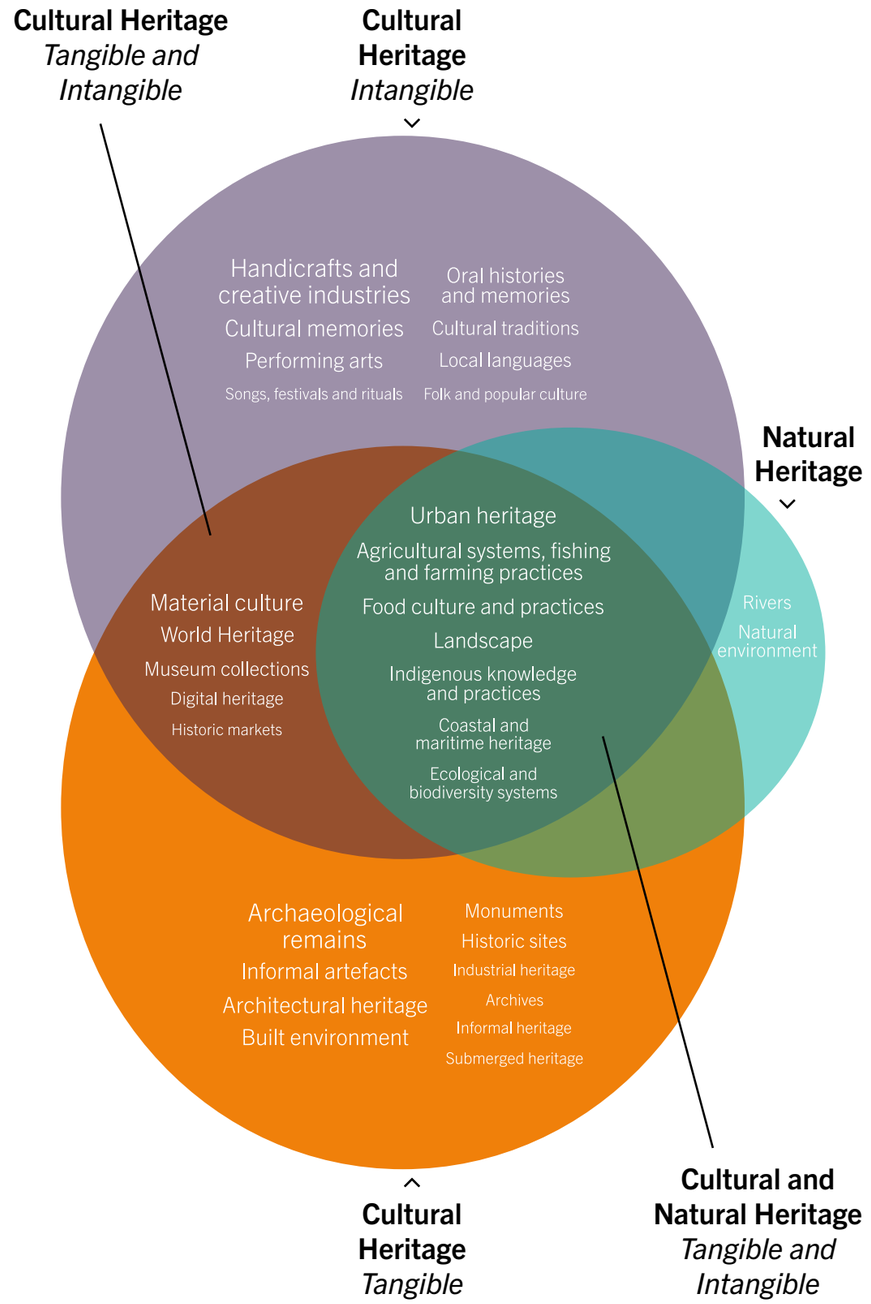
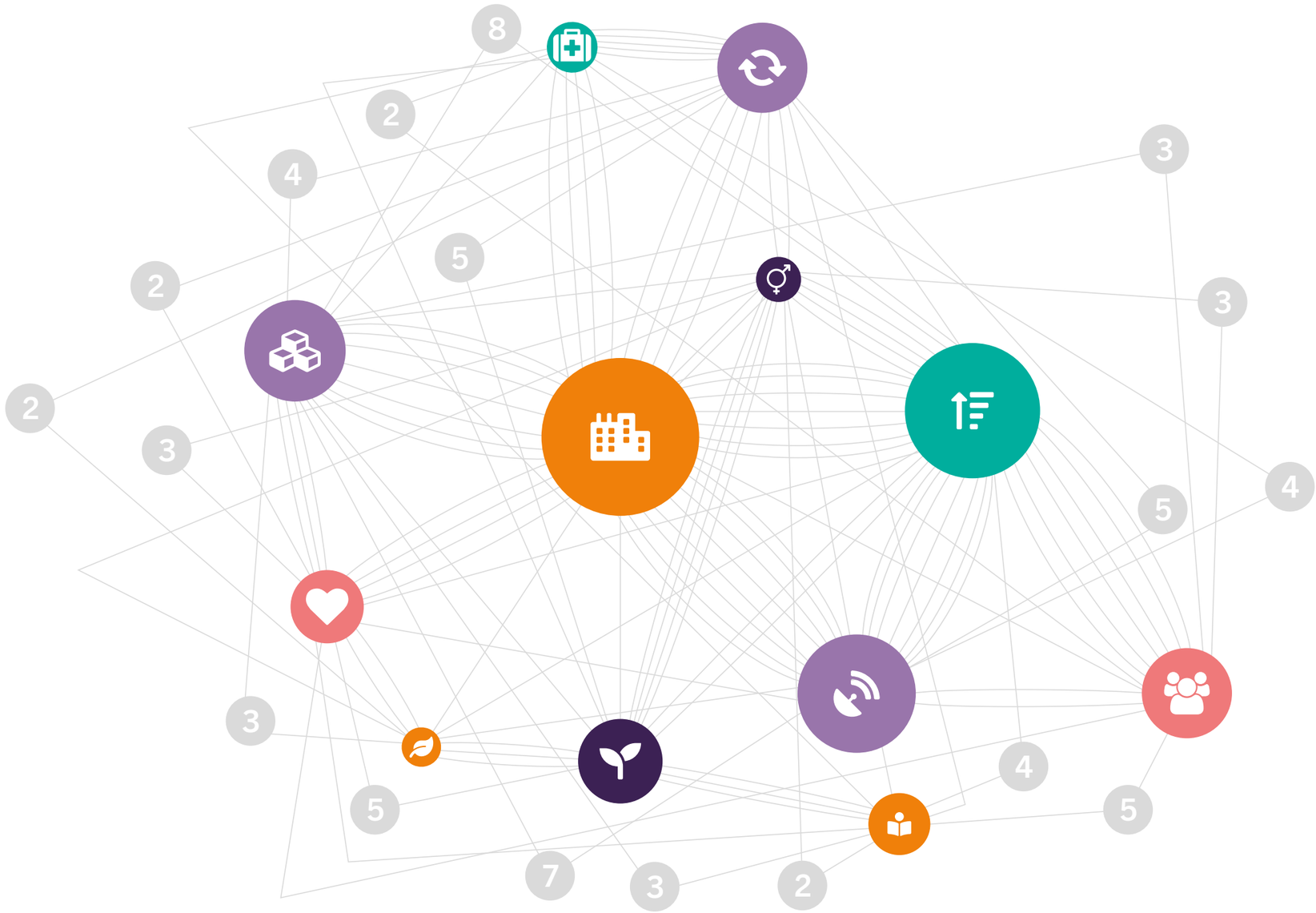


Table 1. Thematic Clusters and the SDGs

Thematic Cluster	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS
Inclusive and Sustainable Cities (28 projects)						6.b				10.b	11.3, 11.4, 11.6, 11.a, 11.b					16.7	
Digitalisation, Innovation, and Technology (22 projects)					5.b				9.b	10.b							
Poverty Alleviation and Sustainable Socio-Economic Development (25 projects)	1.1, 1.a			4.4				8.3, 8.7, 8.9		10.b				14.7			
Food Security and Sustainable Agriculture (15 projects)		2.2								10.b							
Global Health and Well-Being (13 projects)		2.4	3.4, 3.d			6.a				10.b							
Sustainable Management of Landscapes, Ecosystems, and Biodiversity (7 projects)		2.5				6.6	7.a			10.b	11.4	12.8, 12.b		14.2	15.1, 15.4, 15.5, 15.9		17.2, 17.6, 17.9, 17.16, 17.17
Adaptation to Climate and Environmental Change (16 projects)		2.4								10.b			13.1, 13.3, 13.b		15.3		
Disaster Response and Resilience (10 projects)	1.5									10.b	11.4, 11.b		13.1				
Human Rights, Inequality Reduction, and Minorities' Inclusion (17 projects)										10.2, 10.3, 10.6, 10.b						16.7, 16.b	
Gender Equality (10 projects)					5.1, 5.2, 5.5, 5.b, 5.c					10.2, 10.b							
Inclusive, Equitable, and Quality Education (13 projects)				4.3, 4.5, 4.7, 4.b, 4.c						10.b							
Balancing Heritage Conservation and Development (18 projects)						6.b		8.9	9.a	10.b	11.4						

Infographic 4. Number of Projects for Each Thematic Cluster and Interconnection between Clusters



- Inclusive and Sustainable Cities
- Digitalisation, Innovation, and Technology
- Poverty Alleviation and Sustainable Socio-Economic Development
- Food Security and Sustainable Agriculture
- Global Health and Wellbeing
- Sustainable management of Landscapes, Ecosystems, and Biodiversity
- Adaptation to Climate and Environmental Change
- Disaster Response and Resilience
- Human Rights, Inequalities Reduction, and Minorities' Inclusion
- Gender Equality
- Inclusive, Equitable, and Quality Education
- Balancing Heritage Conservation and Development

Size of circle indicates N° of Projects for Each Thematic Cluster. Interconnecting lines and markers indicate N° of Interconnections between Each Thematic Cluster.

“Rapid and uncontrolled urbanisation, however, may frequently result in social and spatial fragmentation and in a drastic deterioration of the quality of the urban environment and of the surrounding rural areas. Notably, this may be due to excessive building density, standardized, and monotonous buildings, loss of public space and amenities, inadequate infrastructure, debilitating poverty, social isolation, and an increasing risk of climate-related disasters. Urban heritage, including its tangible and intangible components, constitutes a key resource in enhancing the liveability of urban areas, and fosters economic development and social cohesion in a changing global environment. As the future of humanity hinges on the effective planning and management of resources, conservation has become a strategy to achieve a balance between urban growth and quality of life on a sustainable basis”. *UNESCO 2011, Paras. 2-3*

Inclusive and Sustainable Cities

From 2008, and for the first time in history, more than a half of the global population live in cities. It is estimated that by 2050 two-thirds of all humanity will be living in cities (UN Habitat 2016, Art. 2). Urban environments are important centres of innovation, technology, and creativity, and provide opportunities for employment, education, social, and human development. However, the rapid process of urbanisation and migration of the last decades has caused an increasing demand for housing, infrastructure and services, the growth of mega-cities, slums, and informal settlements, especially in the Global South, and many other significant physical, economic, environmental and social transformations. Such transformations include: excessive building density; standardized and monotonous buildings; loss of public space and amenities; inadequate infrastructures; lack of accessibility to safe and affordable housing and basic services for the most disadvantaged and vulnerable people; social fragmentation and exacerbation of inequalities; deterioration of the quality of urban life and peoples’ health; and an increasing risk of climate change-related disasters. These transformations challenge the achievement of equality and social justice in urban environments, as poor, marginalised, displaced and other vulnerable communities, individuals, and groups suffer disproportionately from the consequences. Contemporary urban changes also threaten the preservation of cities’ heritage, highlighting the need to find and implement appropriate conservation, management, and development strategies acceptable to a variety of stakeholders.

Given the broad range of challenges confronting urban environments, it is not surprising that the majority of GCRF and Newton research projects (28 projects) have aimed to foster more inclusive and sustainable cities. Such projects start from the understanding that heritage—including not only monuments, buildings, streets, and urban spaces, but also people’s memories and histories, ritual processes, traditions, and performances, among others—constitutes a key resource in defining urban identities, enhancing urban liveability and inclusion, and fostering socio-economic development. Heritage research

projects have contributed to address SDGs 11 (targets 11.3,[8] 11.4[9] and 11.a[10]) and 16 (target 16.7[11]). Thus, they have emphasised that sustainable development cannot be achieved without substantially rethinking and transforming current ways of urban and territorial planning, urban heritage conservation and management, and urban governance in more integrated, inclusive, and participatory manners. The research projects have been largely implemented in two geographical areas in particular, India (10 projects) and Egypt (5 projects), but also in Turkey (ref. 60), Lebanon (ref. 32), and China (ref. 11, 65 and Case Study 8). Moreover, a further five projects have contributed to efforts on adaptation to climate and environmental change and disaster response and resilience (SDG 11, target 11.b[12]) in urban contexts located in Nepal (ref. 7 and Case Study 2), the Pacific (Case Study 5) and the Caribbean (ref. 29 and Case Study 4).

Focus 3. The Historic City of Ajmer-Pushkar: Mapping Layers of History, Use, and Meaning for Sustainable Planning and Conservation (ref. 77)

This project reinforces our initial conviction that cultural and religious rituals and festivals need be understood for socially inclusive design of urban spaces in historic Indian cities. To this end we have developed a website displaying two digital tools, intended to be prototypes. The first is an interactive map of the historic area of Ajmer. This is linked to an account of the historical development of the city, and incorporates textual, photographic and video material, including virtual tours of important streets, interviews, and mapping of ritual activities. The second is a 3d scan of a chowk (street intersection) and havelis (courtyard houses) in a bustling and complex quarter of the old city. An unexpected finding is that the 'visual noise' resulting from the bustle of human activity adds a dimension inviting deeper interpretation.

The online presence of this material is intended to generate comment and critique, to be acted on by DRONAH Foundation, one of the project partners, through its involvement in the Government of India's HRIDAY programme (Heritage Rejuvenation Development and Augmentation Yojana). DRONAH Foundation is using the research findings as a focus for discussions with relevant government bodies (Ministry of Urban Development; Government of Rajasthan) on city specific policies for inclusive and sustainable heritage conservation planning in Ajmer. (…) In the context of our findings, social mapping has been accepted by the Ministry as an important component to be included in the revised guidelines for HRIDAY. We can also point to two small instances of impact at this point. At the urban level, recommendations by DRONAH Foundation for certain ritually important areas to be pedestrianized are to be implemented by the Ajmer municipality. At the individual building level, the owner of a gota (embroidery) factory installed in a historic haveli with mural paintings, has already acted on advice for protection of the structure.

Source: Project Findings and Impacts on UKRI Gateway to Research

On the one hand, these projects, mainly funded through Newton, have focused on the following: the impact that Indian urbanisation processes have had on heritage assets and values and on marginalised communities (ref. 23, 64, 74, 81); how alternative history of utopian urban planning can inform and shape future cities' planning and governance trajectories, which have so far been changed, dominated or appropriated by top-down visions (ref. 52); and the potential of digitalisation, innovation, and technology for adopting smart solutions to urban challenges, increasing inclusivity, engagement, and participation and improving heritage documentation, conservation, interpretation, and awareness (ref. 48, 60, 82, 84, Focus 3 and Case Study 8). In this context, Focus 4 demonstrates how particular attention should be given to the recognition and understanding of varied meanings and values associated with urban heritage by different stakeholders and how they may diverge from official narratives (e.g. World Heritage's Outstanding Universal Value). Another aspect of these projects is that

8 Target 11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

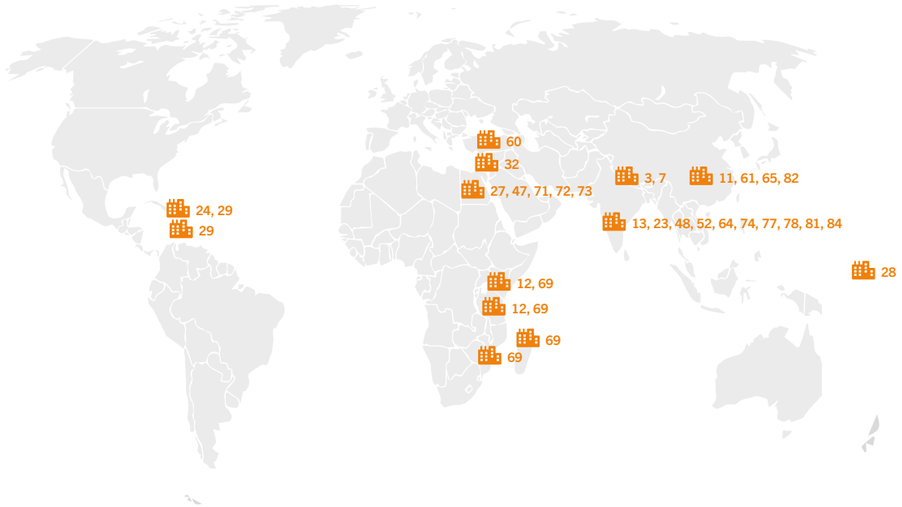
9 Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

10 Target 11.a: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

11 Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels.

12 Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

Infographic 5. Map with Worldwide Distribution of Projects Related to Inclusive and Sustainable Cities (28 projects)



Ref.	Project Title	Country(ies)
3	After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster	Nepal
7	Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage, and Subsurface Heritage Protection Protocols in Kathmandu	Nepal
11	China Ports: History, Heritage and Development	China
12	Co-production Networks for Community Heritage in Tanzania (CONCH)	Kenya, Tanzania
13	Community-led Heritage Regeneration in India	India
23	Digital Urbanism and Diasporas: Walking the Cultural Heritage of Calcutta's Riverfront	India
24	'Disaster passed'. Resilient Caribbean futures via shared knowledge of recent disasters	Monserrat
27	Egypt's Living Heritage: Community Engagement in Re-Creating the Past	Egypt
28	Enduring Connections	Kiribati
29	Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat	St Vincent, Monserrat
32	Following the Wires: Sensing Socio-Material Practices of Everyday Electricity Supply in Post-conflict Greater Beirut	Lebanon
47	Interdisciplinary Approach for the Management and Conservation of UNESCO World Heritage Site of Historic Cairo. Application to Al-Ashraf Street	Egypt
48	IT INDIAN HERITAGE PLATFORM: Enhancing Cultural Resilience in India by Applying Digital Technologies to the Indian Tangible and Intangible Heritage	India
52	Learning from the Utopian City: an International Network on Alternative Histories of India's Urban Futures	India
60	Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls	Turkey
61	Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera	China
64	Reflecting on the River: Rapid Urbanisation and Representations of Indian Cultural Heritage	India
65	Repositioning Graphic Heritage	China
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to help develop sustainable social, economic and cultural benefits	Kenya, Tanzania, Mozambique, Madagascar
71	Sounds from a Threatened Suburb: Developing a People's History of Heliopolis as a Route to a Sustainable Urban Future	Egypt
72	Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities	Egypt
73	Sustainable Solutions towards Heritage Preservation in the Asyut region (Middle Egypt)	Egypt
74	Tamil Temple Towns: Conservation and Contestation	India
77	The Historic City of Ajmer-Pushkar: Mapping Layers of History, Use, and Meaning for Sustainable Planning and Conservation	India
78	The Hugli River of Cultures Pilot Project, from Bandel to Barrackpore	India
81	The Politics of Performance on the Urban Periphery in South India	India
82	Time, Culture and Identity: the Co-Creation of Historical Research and Co-Development of Visitor Experience in China and the UK	China
84	Urban Heritage and the Digital Humanities in India	India

they have supported interdisciplinary, integrated, and bottom-up strategies and pilot studies aiming at balancing heritage conservation and development. This has been achieved through sustainable heritage conservation and management models as well focusing on health and well-being through improved waste management and sanitation (SDG 6, target 6.b[13]; SDG 11, target 11.6[14]), directly engaging with local communities and working in partnership with local organizations and authorities (ref. 13, 47, 72, 73, 78, Case Study 9 and Case Study 10).

Focus 4. Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls (ref. 60)

This research demonstrates the plurality of meanings attached to a single World Heritage Site by diverse community members, and how these meanings contribute to everyday senses of belonging and sociality. We have co-produced new heritage interpretation resources that showcase community meanings of heritage through innovative methods that are in themselves a form of research by practice. The interpretations and valorisations of heritage that emerged through this process exceed the terms of the UNESCO World Heritage site's Statement of Outstanding Value. Our findings also involve discovering appropriate processes for engaging with communities and co-producing heritage resources with them. We have learned that:

1. Conducting walking ethnographies with local residents is a valid way of identifying and valorising plural heritage perspectives. Our project conducted almost 80 interviews (mostly walking) to gain a picture of what local people thought and felt about the UNESCO site on their doorstep. We believe that this is one of the most significant ethnographic exercises to be conducted in a critical heritage context and the broad range of personal memories has the potential to significantly shift the way that we identify and valorise heritage perspectives and thus notions of Outstanding Universal Value.
2. The speculative design methods conducted with stakeholders to heritage sites can provide a more varied set of personal, emotional, and sensory remembering. We conducted creative tasks with participants which encouraged speculative forms of remembering. The people we worked with used the license afforded by this activity to speculate freely on the experience of living in particular periods and were able to connect the past and present in new ways.
3. Community co-production can inform the shape of, and provide content for mobile apps. We produced an app which included content co-produced with project participants. Forming a set of alternative heritage tours, led by locals, the app places the content in dialogue with public space through, for example establishing 'vantage points' in the city from which users can 'listen out' and encounter sounds from the past.

There are likely to be multiple cases, globally, where the official valorisation of a site does not match with local communities' understandings and valorisations of the same, potentially leading to the alienation and disempowerment of communities. Our findings and processes can be applied in such settings, and team members have presented them as possible avenues in relation to UNESCO Circum-Pacific. We have submitted evidence to inform the planning and eventual creation of a heritage site/museum/memorial as a management solution for wartime ruins in Warsaw, Poland.

Source: Project Findings and Impacts on UKRI Gateway to Research

The projects have demonstrated how tangible and intangible heritage assets, digital technologies, and A&H methodologies, including creative and experiential methods, can be mobilised to promote integrated and inclusive urban conservation, management, regeneration, and planning strategies and models that can be applied in other historic cities in India, Egypt, and beyond. Cities and their heritage are shared by a wide range of stakeholders with diverging interests. GCRF and Newton research projects have fostered dialogue and collaboration between different urban groups for example, urban and regional planners, local planning and heritage authorities, academics, and third sector

13 Target 6.b: Support and strengthen the participation of local communities in improving water and sanitation management.

14 Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

organisations, all of whom inform planning and decision-making. Projects have addressed the interface between past and present in multi-dimensional ways, increasing awareness on heritage assets and values under threat and stimulating local communities and other stakeholders to take an active role in urban heritage preservation and management and transmitting to future generations (ref. 27, 71). In particular, they have encouraged and implemented people-centred solutions through better positioning communities within both urban conservation and in regeneration and management processes. This gives a voice to communities (especially the most marginalised and under-represented) and improves response to contemporary needs, thereby renewing their sense of place and fostering social cohesion. Local communities, which have been suffering from disempowerment and deprivation of their role as main (urban) heritage stakeholders and beneficiaries, have been engaged through surveys, interviews, storytelling, workshops, and other projects' activities (e.g. public walks and tour guiding) which include hands-on

Figure 4. The inhabitants of the informal settlements of the former Mughal garden of Zahara Bagh in Agra, India may not know the history of the gardens, but still respect and value the monuments. Project: 'Community-Led Heritage Regeneration in India' (ref. 13). Photograph by Aylin Orbaşlı 2016.

experience. In this way, community-based solutions have been provided according to their needs (see Focus 5). Communities have also been empowered through training and capacity strengthening activities, framing projects' solutions, networking with professionals, and taking an active part in projects' implementation.

Focus 5. Community-Led Heritage Regeneration in India (ref. 13)

This project researches ways in which periphery or 'edge' areas in heritage cities in India can be regenerated through community-led processes that protect heritage assets as well as deliver local socio-economic regeneration benefits, including through tourism. Within the relatively short timeframe available, an action-research methodology was adapted by the two University partners, Oxford Brookes University and the School of Planning and Architecture, Delhi, and a local NGO partner, the Centre for Urban and Regional Excellence (CURE). Working at a pilot site in Agra and building on CURE's established presence in the area, the research team conducted desk and field-based research as part of a process of understanding community needs and establishing their willingness to participate in regeneration. (…) The field-based research tested the efficacy of action-research and rapid assessment methodologies and the use of sample projects (strategies) as a tool to encourage local engagement and providing feedback loops. Despite the spatial and temporal limitations of the project, the strength of the project/strategy outcomes, and the level of community interest and participation in the process has illustrated the validity of the research methods adapted and its suitability for wider application.

(…) The project findings contribute to an existing body of literature in the fields of urban regeneration, community-led regeneration practices, socio-economic development of marginalized communities, heritage values, and pro-poor tourism. The findings of this study make a specific contribution on India and a unique juxtaposition of a marginalised community within an area of high cultural heritage value (a World Heritage Site) and close proximity to areas of major tourism activity. The research has been closely aligned with practice, and the findings are relevant to local decision makers (heritage, tourism and urban planning), international organisations such as UNESCO as well as local NGOs operating in Agra and India. Findings have been

shared with local decision makers and NGOs. (…) The fieldwork findings and strategic recommendations generated are of particular interest to CURE, informing their operational activities in the case study area and in building on the outputs to inform future programmes and funding applications for their work in Agra and elsewhere in India.

Source: Project Findings and Impacts on UKRI Gateway to Research

Figure 5. Exploring urban graphic heritage exhibition. This 16-panel exhibition accompanied the Design for Heritage in Theory symposium, 15 October 2019, at Tongji University College of Design and Innovation during Pan-Tongji Design Week 2019. Project: 'Repositioning Graphic Heritage' (ref. 65).

"Urban communities often valorise and make meaning from the past in ways that are not recognised by official heritage authorities. Working creatively with communities to explore plural heritages can counter dominant historical narratives and sustain people's positive relationships to place, helping to create conditions for reduced inequality, and more liveable cities." *Prof. Chris Whitehead, Newcastle University (ref. 60)*

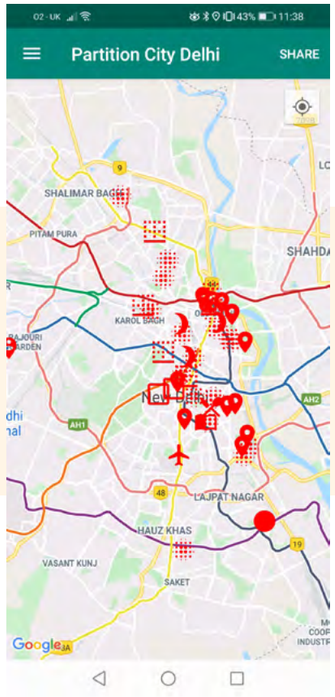


Figure 6. City map of trigger points, Partition City Delhi, screen shot. Project: 'Urban Heritage and the Digital Humanities in India' (ref. 84).

“Rapid technological change can contribute to the faster achievement of the 2030 Agenda by improving real incomes, enabling faster and wider deployment of novel solutions to economic, social and environmental obstacles, supporting more inclusive forms of participation in social and economic life, replacing environmentally costly modes of production with more sustainable ones, and giving policymakers powerful tools to design and plan development interventions”. *UN Economic and Social Council 2019, p. 3*

Digitalisation, Innovation, and Technology

The research projects have utilised the potential of (digital) heritage to stimulate and support the digitalisation, innovation, and technological development of governmental departments (SDG 9, target 9.b[15]) like the Jordanian Department of Antiquities (see Focus 6). Moreover, digital heritage, innovation, and technology have offered exciting possibilities for tackling global challenges in Jordan, China, Egypt, India and Malaysia.

Focus 6. MaDiH: Mapping Digital Heritage in Jordan (ref. 54)

The project contributes to the long-term sustainable development of Jordan’s digital cultural heritage, identifying key systems, datasets, standards, and policies, and aligning them to government digital infrastructure capabilities and strategies. Defining a robust technical and operational architecture for digital cultural heritage, it assists the Department of Antiquities in their planning processes, helps product development teams develop their systems, facilitates the aggregation of valuable datasets held in disparate repositories, and ensures data generated from research activity is properly stored and widely accessible. Analysis will also result in the identification of infrastructural gaps and opportunities for further development, including system development, data aggregation, and online learning. Practical prototyping will ensure analysis and lessons learnt are cost-effective and aligned to real-world scenarios, and a series of workshops with stakeholders from the cultural heritage, research, government, and technology sectors, will ensure the project fulfils the needs of the local community. A hackathon, led by the Jordanian Open-Source Association, will ensure analysis and lessons learnt are aligned to educational and commercial opportunities.

Key outputs from MaDiH, to be made available online, will include:

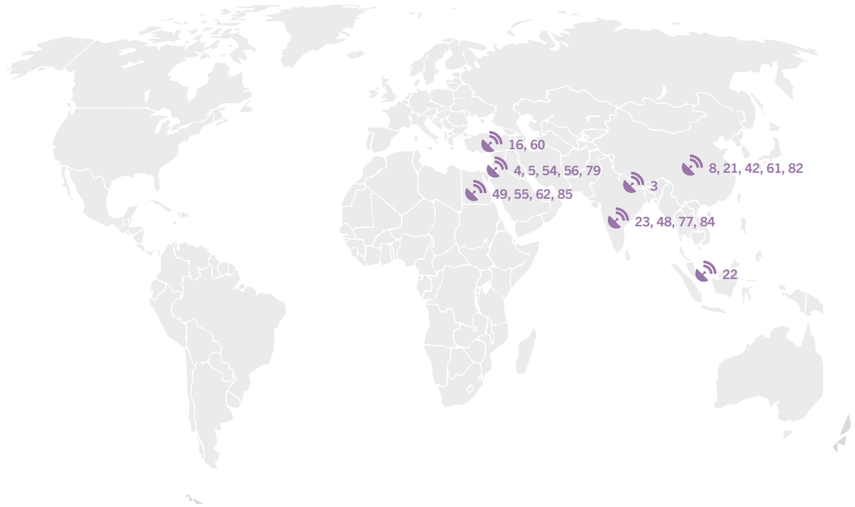
15 Target 9.b: Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.

- A policy white paper, identifying relevant national and international policies, frameworks, and standards and making recommendations for their future adoption and/or implementation;
- A technical white paper, listing requirements for improvements to existing infrastructure, systems, and tools and make recommendations for their future implementation;
- A prototype National Data Catalogue, listing the datasets found over the course of the project;
- Training in Research Software Engineering, delivered by King's Digital Lab (King's College London).

Source: Response to PRAXIS Survey on Heritage for Global Challenges by James Smithies (Principal Investigator)

Considering the increasing rate of destruction of heritage sites and the urgent need for their preservation before irreversible loss, the research projects have contributed to find innovative and technological methods for digital heritage diagnosis, recording, reconstruction, display and transmission to future generations. In this context, the combination of heritage research with digital technologies has been at the forefront of interdisciplinary innovation and has proven to be a key ally in both disaster response and resilience and adaptation to climate and environmental change, particularly in contexts where heritage is particularly at risk of disappearance or has already been destroyed or damaged as a consequence of war, conflict, climate change, earthquakes, environmental disasters, and other harmful events (ref. 3, 4, 62, 79, 85 and Case Study 2). Through the use of new media, technological platforms and digital software and tools (e.g. digital modelling, immersive virtual and augmented reality, filmmaking, audio-visual archives, virtual exhibitions and site tours, mobile apps, etc.), the research projects have provided museums, heritage site conservators and managers, governmental bodies, academic institutions and other stakeholders with digital alternatives to physical heritage preservation and enjoyment.

Infographic 6. Map with Worldwide Distribution of Projects Related to Digitalisation, Innovation, and Technology (22 projects)



Ref.	Project Title	Country(ies)
3	After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster	Nepal
4	Augmenting Jordanian Heritage	Jordan
5	Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe Project	Jordan
8	Centre for Digital Copyright and Intellectual Property Research in China	China
16	Cultural Heritage in Landscape: Planning for Development in Turkey	Turkey
21	Digital Platforms for Craft in the UK and China	China
22	Digital Threads: Towards Personalised Craft Production in Malay Cottage Industries	Malaysia
23	Digital Urbanism & Diasporas: Walking the Cultural Heritage of Calcutta's Riverfront	India
42	Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China	China
48	IT INDIAN HERITAGE PLATFORM: Enhancing Cultural Resilience in India by Applying Digital Technologies to the Indian Tangible and Intangible Heritage	India

Ref.	Project Title	Country(ies)
49	LABYRINTH: Conservation, Analysis and Virtual Reconstruction of the Archaeological Site of Hawara Pyramid and Labyrinth (El Fayoum)	Egypt
54	MaDiH: Mapping Digital Heritage in Jordan	Jordan
55	Monitoring Object and Visitor Environments (MOVE)	Egypt
56	Our Past, Our Future, All Together in Faynan (OPOF)	Jordan
60	Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls	Turkey
61	Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera	China
62	Preserving Egypt's Cultural Heritage from Earthquake Damage through Vibrating Barriers (ViBa)	Egypt
77	The Historic City of Ajmer-Pushkar: Mapping Layers of History, Use, and Meaning for Sustainable Planning and Conservation	India
79	The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village	Jordan
82	Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK	China
84	Urban Heritage and the Digital Humanities in India	India
85	Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo	Egypt

"Heritage can play an important role in building strong collaboration and innovating to deliver new digital experiences". *Dr. Tilly Blyth, Science Museum (ref. 82)*

Focus 7. Urban Heritage and the Digital Humanities in India (ref. 84)

The Research Network brought together academics, curators, archivists and heritage volunteers to undertake software training and to explore the potential of the digital humanities in complex urban environments. The project used the safarnama platform to create two digital heritage experiences, 'Delhi Partition City' and 'Gadhr seAzaadi' (Rebellion to Freedom). Both experiences were launched in Delhi on 17 September 2019 and have received significant attention in the city and national media. The safarnama software creates heritage engagement based in mobility and proximity. The experiences contain trigger zones around places of interest. If app users pass within these trigger zones, they receive a push notification alerting them to nearby heritage. In this way, smart phone users can encounter 'ambient' heritage in small bursts, and in several languages, as they travel across urban landscapes. A further digital heritage experience, Partition City Karachi, has been developed in a collaboration with the Pakistan Chowk Community Centre in Karachi and Professor Sarah Ansari, Royal Holloway University.

The authoring software is freely available. The PI was invited to the Lahore University of Management Science (LUMS) in September 2019 to provide software training to a group of students so that they could build their own heritage experiences of the Walled City in Lahore. A proposal to develop new experiences in Lahore based on the anti-colonial and revolutionary history of the city, in collaboration with the Lahore Biennial has been developed Dr. Ali Qasim of the LUMS. Safarnama software has the tender to provide a new app for Professor Claire Connolly's ERC project, 'Ports, Past and Present'. This collaboration will allow safarnama to be developed for iOS platforms and will introduce new interface functionality, in particular, to allow users to share experience content through social media. The new app and Irish Sea experiences will launch in April 2021.

Source: Project Findings and Impacts on UKRI Gateway to Research and consultation with Deborah Sutton (PI)

The creation of digital heritage assets has allowed researchers and the above-mentioned stakeholders to engage with distant and remote heritage locations, as well as with different kinds of visitors, travellers, residents, minorities (ref. 42), refugees and marginalised communities, individuals, and groups, thereby increasing audience outreach and research. This digitalisation strategy has also contributed to making local

heritage more accessible to everybody as well as attracting potential tourists to support local socio-economic development (ref. 56). The active engagement of local people has nurtured a sense of local ownership and has increased heritage awareness, which are two fundamental prerequisites for preserving and transmitting heritage relevance and values over time. Virtual Reality (VR) immersive experience, for example, has been used to enhance access to heritage and as a stimulus and entry point for intra- and inter-family and community discussions and engagement (see Case Study 3). At the same, it has also contributed to promoting the empowerment of women involved in the projects' activities (SDG 5, target 5.b[16]). Moreover, the use of specific technological tools such as remote non-intrusive sensing, laser scanning, LiDAR technologies, and digital surveys has increased the understanding of existing heritage structural, socio-cultural, and environmental conditions in the following ways: the production of conservation scenarios and recovery models in advance of implementation (ref. 49); the implementation of evidence-based strategies and action-plans to inform sustainable preservation (ref. 79); and the monitoring of heritage environmental conditions to better respond to climate change and other environmental fluctuations (ref. 55). This has served to incorporate heritage data into a computerised virtual environment.

Focus 8. Digital Threads: Towards Personalised Craft Production in Malay Cottage Industries (ref. 22)

Our initial findings from interviews with 12 home-based weavers from four Malay villages, led to the identification of three types of weavers and their distinct motivations. Most of the weavers in the rural area work with a trader who controls the songket production and distribution in that area. The broker plays a vital role in the songket supply and demand chain. The village weavers face four key challenges which make women economic empowerment difficult. These include the challenge of finding or being found by potential customers, the disproportionate information and economic power held by the trader reflected in exploitative relationships with the weavers, the challenge of limited technical skills for customizing the songket design, and the challenge of protecting the authenticity of the newly made songket designs. Our rich fieldwork data allowed us to develop a range of empirically grounded implications for design and requirements that have been and continue to inform the design and implementation of our three apps. With respect to the use of blockchain technology to support capturing the authenticity of songket practice and songket design, we have done some preliminary work exploring the interest of this technology in Malay context.

We have found that while the number of people involved in blockchain transactions is fast growing in Malaysia, there is a need for new tools to help them increase trust in each other, support the transparency of two-way and reversible transactions, and for materialising trust. We also run contextual interviews with 92 participants including preparation workers, weavers, designers, merchants, and customers. Findings indicate that increased creative infrastructural actions are reflected in these actors' resourcefulness for mobilising information, materials, and equipment, and for making creative artifacts through new technologies weaved within traditional practices. We propose two approaches to design in this craft-based infrastructure. First, we explore designing for the social layer of infrastructure and its mutually advantageous exploitative relationships rooted in culture and traditions. Second, we suggest designing for roaming value-creation artifacts, which blend physical and digital materializations of songket textile design. Developed through a collaborative and asynchronous process, we argue that these artifacts represent less-explored vehicles for value co-creation, and that both them and their socio-technical infrastructure as emerging sites of innovation could benefit from Human-Computer interaction research.

Source: Project Findings and Impacts on UKRI Gateway to Research

As already mentioned, digital technologies have been used to foster inclusive and sustainable cities (ref. 23, 48, 60, 77, 84 and Case Study 8), but also in the sustainable management of landscapes, ecosystems, and biodiversity (ref. 16). They have supported the preservation of urban heritage and landscapes and raised awareness about their value, adapting smart solutions to contemporary challenges, outlining future

16 Target 5.b: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

Figure 7. Gadara/Umm Qais World Heritage Site in Jordan: Laser scanning. Project: 'The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village' (ref. 79). Credit: UmmQaisHeritage 2020

transformation scenarios, and increasing inclusivity, engagement, and participation. Geographic Information System (GIS), geomapping, Building Information Modelling (BIM), 3D models, and digital apps have been used to gather, manage, analyse, and display different typologies of heritage data. Data on buildings, for instance, information on constructive techniques and state of conservation, has been complemented with intangible heritage assets and values, like folklore, traditions, uses, and people's stories associated with the buildings and their urban environment (ref. 48). Allowing spatial and location data and organising different information layers into map visualisation and 3D scenes, these technologies have provided deeper insights into urban heritage. This has increased governmental and non-governmental stakeholders' awareness about tangible and intangible heritage, which could lead to a better-informed decision-making process. Digital technologies and social media have allowed for the exploration of new ways to engage with local heritage and amplify marginalised voices. Moreover, they have raised awareness about the importance of local heritage for cities' past, present and futures, as well as having strengthened interconnections, exchange, and dialogue between different urban stakeholders involved in heritage conservation, documentation, and management (see Focus 7).

"Building technological and scientific infrastructure is valuable to ensuring a continued and rich legacy for museum objects and sites". *Dr. Yosha Al-Amri, Jordan Museum (ref. 4)*

Finally, digital tools have also contributed to poverty alleviation and sustainable socio-economic development by stimulating the creative industries in China and Malaysia (ref. 21, 82 and Focus 8). These projects have harnessed the potential of digital platforms (social networks, search engines, online marketplaces, and content distribution) to: support the creation of individual hand-making of unique individual artefacts and artistic products, both physical and digital; facilitate access to markets and costumers; and provide innovative customer-centric business models for the management of the demand chain. These projects have also raised questions about how varied uses of digital platforms in different countries

(e.g. UK and China), rooted in different economic, social and political contexts and with diverse digital infrastructure, policies, regulations, may affect creative economy methods and patterns of production and consumption. Furthermore, they have advanced knowledge on contemporary issues related to Intellectual Property (IP) and Copyright protection regulations that are most conducive to promoting the growth of creative industries in China and how to make them more effective (ref. 8).

"Using digital heritage technologies to record and preserve endangered and multi-layered heritage sites has an extreme value in keeping a longlisting record of tangible and intangible histories, and supports the prosperity of local communities engaged in this preservation". *Dr. Gehan Selim, University of Leeds (ref. 79)*

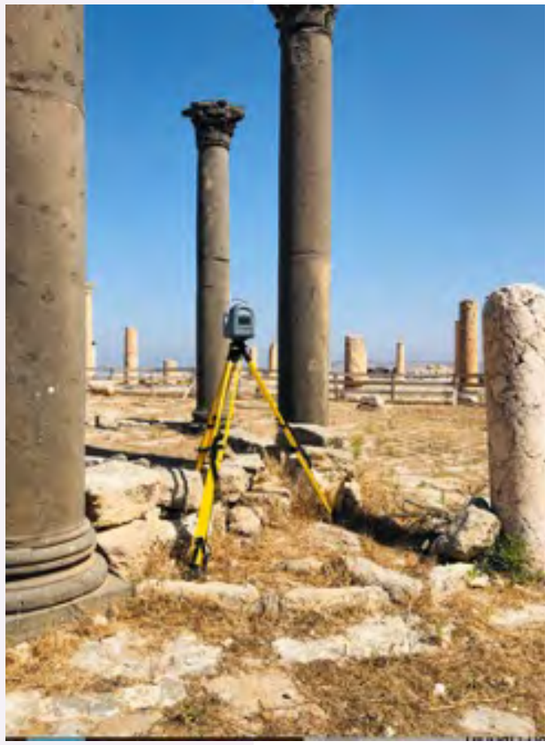


Figure 8. Gadara/Umm Qais World Heritage Site in Jordan: Laser scanning. Project: 'The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village' (ref. 79). Credit: UmmQaisHeritage 2020

"Ending global poverty and boosting shared prosperity will require not just a focus on overall levels of growth, but particular attention to the nature and patterns of growth. Although the incomes of the poorest have tended to be correlated with average income growth in the past, there are also notable exceptions, where overall growth has not translated to effective poverty reduction or has taken place alongside increased inequality. This suggests that it is not just growth, but also the type of growth (growth that benefits the poor) that will be important (…)."
The World Bank 2015, p. 13

Poverty Alleviation and Sustainable Socio-Economic Development

In the past few decades, substantial progress has been made in reducing global poverty and unemployment and in boosting shared prosperity (The World Bank 2015, 6). However, billions of people continue to live in poverty and are denied a life of dignity (United Nations 2015, Art. 14). The impact of COVID-19 will exacerbate these issues and existing social and economic inequalities even further. It is now even more urgent to rethink and reframe our (unsustainable) models of development, which have often merely focused on economic growth. This focus often fails to acknowledge other important aspects related to human development, e.g. local cultures, places and traditions, communities' needs, aspirations, happiness and spiritual enrichment, social cohesion and so on.

25 GCRF and Newton research projects have contributed to filling this gap by promoting more inclusive, people-centred and sustainable ways of economic development and welfare and contributing to capacity strengthening (see Focus 9). They have shown how heritage can be effectively and sensitively unlocked and mobilised to contribute to poverty alleviation (SDG 1, target 1.1[17] and 1.a[18]) and to stimulate socio-economic growth and entrepreneurial activities (SDG 8, target 8.3[19]), particularly by enhancing the tourism sector and the creative industries (SDG 8, target 8.9[20]). In this context, properly balancing heritage conservation and development is fundamental to preserving heritage from contemporary developmental and infrastructural projects (ref. 11, 63, 69), but it also essential to avoiding unintended consequences of heritage for development, like mass tourism, exploitation of local resources (cultural, human and natural), heritage

17 Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day.

18 Target 1.a: Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions.

19 Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.

20 Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

degradation, gentrification, and social changes, etc. Research projects have explored how sustainable economic development can be fostered through the enhancement and promotion of local heritage, urban regeneration, communities' engagement and unlocking the embedded knowledge and creativity they hold (ref. 72, 87). They have also contributed to inclusive, equitable, and quality education and SDG 4 (target 4.4[21]) through the provision of vocational and technical training to increase employment (particularly in the tourism sector) and foster the creation of new businesses and social enterprises.

"A&H research perspectives need to focus on qualitative outcomes such as spiritual fulfilment, the freedom to dream, to enjoy happy lives, the creation of communities of solidarity… all these are very important 'goods' in the daily life of the people we work with (…) but are often missed out in research programmes dominated by metrics and quantifiable criteria. We need to look again at the way we can amplify or restore feelings of hope, joy, and confidence in the people we work with. (…) In our research, we prioritise what the women farmers themselves have a passion for doing and creating. I think this is where the A&H can actually make quite a difference to much of the research that is being done in development studies". *Dr. Sandip Hazareesingh, The Open University (ref. 9)*

21 Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

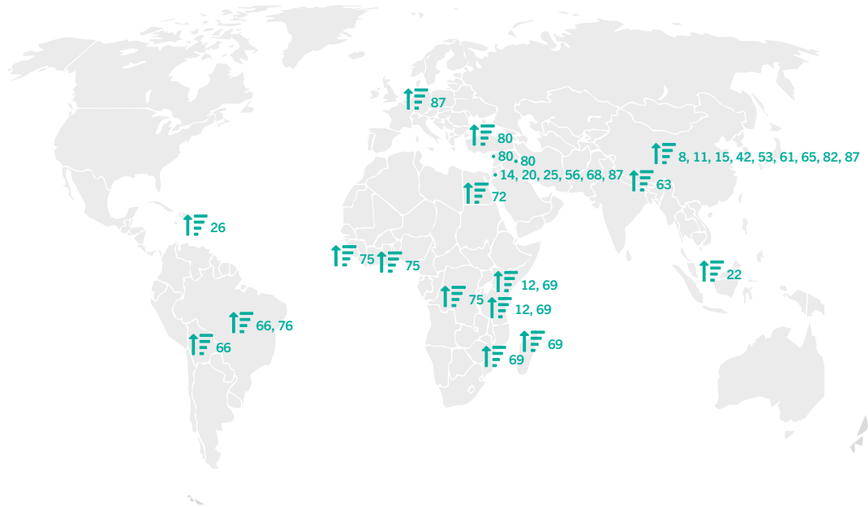
Focus 9. The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development (ref. 76)

Even though Indigenous welfare is rooted in its arts and cultural practices, this knowledge is not part of a Brazilian or international exchange framework beyond anthropological study. Through establishing a controlled experiment in cross-cultural exchange that is initiated by one of the tribes of the Xingu, the research forges new connections between Indigenous culture and the broader cultural industries in Brazil and beyond. The pilot programme looked to enable the Kuikuro Indigenous Association of the Upper Xingu (AIKAX) to establish good practices, measure impact and demonstrate how cultural exchange can stimulate economic development and welfare in ways that are not destructive to the Kuikuro culture and languages. The ambition of the research includes investigating ways to preserve and strengthen the contribution of Brazilian indigenous cultural practices to the welfare of their own societies, as well as to a wider community in Brazil, through an exchange process with non-indigenous artists.

The research reveals the role digital technologies can play in connecting indigenous cultures with the world, as well as documenting and preserving their cultures, knowledge, and experiences. The community has experimented with methodologies for exchange that are ethical, equitable and do not pose a threat to their fragile environment and cultures, but also offer an opportunity to generate income for the community looking forward. The research places Indigenous artists and research as protagonists rather than passive consumers of external influences or victims of cultural invasion by finding modes of engagement that can strengthen the capacity of Indigenous peoples, in which they define the terms and can actively participate in Brazil's—and the world's—broader cultural industries.

Source: Response to PRAXIS Survey on Heritage for Global Challenges by Paul Heritage (Principal Investigator)

Infographic 7. Map with Worldwide Distribution of Projects Related to Poverty Alleviation and Sustainable Socio-Economic Development (25 projects)



Ref.	Project Title	Country(ies)
8	Centre for Digital Copyright and Intellectual Property Research in China	China
11	China Ports: History, Heritage and Development	China
12	Co-production Networks for Community Heritage in Tanzania (CONCH)	Kenya, Tanzania
14	Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan	Jordan
15	Craft China: (Re)making ethnic heritage in China's creative economy	China
20	Dhiban: Valuing Sites Through Valuable Stories	Jordan
21	Digital Platforms for Craft in the UK and China	China
22	Digital Threads: Towards Personalised Craft Production in Malay Cottage Industries	Malaysia
25	Discovering WF16: Building Engagement with Neolithic Archaeology as Pathway to Economic Development in Southern Jordan	Jordan

Ref.	Project Title	Country(ies)
26	Dominica as a Centre of Excellence for the Preservation & Celebration of the Creole Culture through Language, the Arts and its Indigenous Kalinagos	Dominica
42	Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China	China
53	Located Making: Unlocking the Potential of Cultural Heritage by Design	China
56	Our Past, Our Future, All Together in Faynan (OPOF)	Jordan
61	Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera	China
63	Promoting the Protection of Heritage Sites in Nepal's Western Terai in the Face of Accelerated Development	Nepal
65	Repositioning Graphic Heritage	China
66	Research Partnership for an Agroecology-Based Solidarity Economy in Bolivia and Brazil	Bolivia, Brazil
68	Rewriting the Prehistory of Jordan	Jordan
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
72	Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities	Egypt
75	The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa	Ghana, Sierra Leone, the Democratic Republic of the Congo
76	The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development	Brazil
80	The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours	Iraq, Syria, Lebanon, Turkey
82	Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK	China
87	World Heritage FOR Sustainable Development	China, Jordan, Belgium

GCRF and Newton research projects have contributed to stimulating ethical, inclusive, and sustainable growth in East Africa (ref. 12, 69) and Latin America (ref. 66, 76) by using their cultural and natural heritage (SDG 14, target 14.7[22]). This has involved actively engaging with community groups and Indigenous Peoples to co-produce solutions to existing challenges in accordance with their needs, and to improving social wellbeing and raising the skills and profile of local organisations (see Focus 10) and Case Study 9). Five projects have supported strategies to improve site management, facilities, interpretation, and communication to attract national and international visitors to their respective areas and to stimulate direct and indirect economic benefits, reduce youth employment and poverty rates in Jordan (ref. 20, 25, 56, 68, 80). These strategies have also been reinforced with the provision of vocational training to support the creation of new economic activities and the development and dissemination of creative outputs (e.g. books, exhibitions, films) in collaboration with schools and local museums to increase local heritage understanding and awareness as well as local engagement. Among these projects, a particular mention goes to the project Our Past, Our Future, All Together in Faynan – OPOF (see Focus 22), carried out by the University of Reading in partnership with the Jordan Department of Antiquities, the Council for British Research in Levant, University of Leeds, University of Petra, University of Jordan, and Queen Mary University of London. This project was awarded the prestigious Newton Prize in 2020 for outstanding results in developing ecotourism in Faynan (Jordan) to support sustainable development, social cohesiveness, and individual well-being, with low-cost investment and benefits flowing directly to the local communities in Faynan (Jordan).

22 Target 14.7: By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

"Craft is inevitably transformed in the digital era and the challenge is how to make better use of digital platforms to support and inherit craft in modern times. Craft makers often need to find ways to balance the hand-made with the digitally produced so that their humanity, heritage, and skill are expressed in the final piece". *Prof. Nick Bryan-Kinns, Queen Mary University of London (ref. 21)*

Focus 10. Bahari Yetu, Urithi Wetu (Our Ocean, Our Heritage)

Bahari Yetu, Urithi Wetu is a project supported by the Network+ project 'Rising from the Depths: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits' (Case Study 9). It has been co-created with the maritime community of Bagamoyo in Tanzania to document the tangible and intangible Marine Cultural Heritage (MCH) of the region; support local communities in developing strategies to leverage their maritime heritage for social and economic benefit; influence local municipality and national policy to determine effective heritage planning with respect to MCH; and explore a sustainable future for regional MCH. The project builds upon and advances the agendas of a new generation of Tanzanian community-heritage-oriented researchers and heritage practitioners, while putting grass-roots perceptions of maritime cultural heritage at the heart of the endeavour. The maritime heritage of Bagamoyo, an icon of Tanzanian coastal beauty, includes locally built wooden watercraft, powered by sail and engaged in economic activity, which are highly important to local communities who use them daily. However, economic, urban, and tourism pressures are threatening MCH as well as local traditional lifeways and practices. As a consequence, coastal communities are facing displacement and loss of access to traditional fish landings, markets, and construction areas, while coping with overfishing and disruption to traditional timber supplies.

The project starts from the understanding that the living heritage of Bagamoyo's maritime communities is undervalued, under-recorded and under threat, while community

perspectives are overlooked. To fill in this gap, the research team works closely with the local boat-building community to understand their needs and priorities and to document the value of MCH as perceived by them, as well as endangered material culture, craft, and fishing practise and connectivity with maritime space. Through documentation and public engagement in the form of cultural events (including an exhibition), and film and music-making, the project celebrates and raises awareness of maritime practice—for example, fishing and boatbuilding—as a heritage asset. It educates the public on its importance, facilitates the safeguarding of regional MCH and advances the sustainable use of marine resources. By involving a women's NGO (WAUTO-Kaole), it has also promoted gender equality, and, through its engagement activities, also well-being and access to educational resources. Moreover, the project has established a boat-builders association CHAMABOMA, that pools resources, expertise, and funds to form a stronger, more economically sustainable and socially visible entity, empower marginal communities, and raise their profile in front of policymakers. The final goal of the project is to produce a policy-oriented agenda, promote ethical development and investments and bring visibility at governmental level to marginalised communities and their expertise.

Sources: Interview with John Cooper (PI), University of Exeter, Lucy Blue (Co-I), Southampton University, and Elgidius Ichumbaki (Co-I and partner), University of Dar es Salaam, 30th July 2020; Response to PRAXIS Survey on Heritage for Global Challenges by John Cooper (PI) and Lucy Blue (Co-I)

Finally, six projects have focused on intangible cultural heritage, graphic heritage, heritage-based material culture, and the creative industries and on their contribution to city branding, urban revitalisation, socio-economic welfare, and wellbeing, particularly in China (ref. 21, 53, 61, 65, 82 and Focus 11). The creative sector has played an increasingly significant role in the economic development in China, particularly since the country joined the UNESCO Creative Cities Network in 2004. In this context, different types of heritage—expressing local knowledge and rooted in communities, places, and materials, traditions—have been translated into contemporary forms, artefacts, and meanings through the use of creativity. However, these new creative products and activities are

not always respectful of peoples' and places' cultural identity and historical legacy to respond to the needs of modern, fast changing, globalised and consumer lifestyles and to increase economic profits (e.g. production of low-quality souvenirs for tourists and other mass-produced products). Heritage research projects have contributed to a better understanding of how contemporary design and creative clusters can better translate this traditional legacy into contemporary expressions and creative outputs, increasing visitors', residents', costumers' and other stakeholders' awareness and stimulating a deeper sense of identity and belonging (see Case Study 8). All these projects have encouraged working relationships and public-private partnerships between academics, businesses, policymakers, community groups, museums, and other organisations to support sustainable economic development through the creative industries in China, the UK and beyond. Moreover, as already mentioned in the previous section, GCRF and Newton projects have taken advantage of innovative digital technologies to enhance the creative industries sectors, harnessing the potential of digital platforms to increase products visibility and marketability (social networks, search engines, online marketplaces, and content distribution). This has served to support the hand-crafting of unique artefacts and aesthetic products, both physical and digital, facilitated access to markets and costumers, and provided innovative customer-centric business models for the management of the demand chain (ref. 8, 21, 82 and Focus 8).

Focus 11. Craft China: (Re)making Ethnic Heritage in China's Creative Economy (ref. 15)

For craft workers in traditional communities the Craft China project provides tangible economic benefits by connecting them with museums that can act as distributors for their products both in their museum shops but also online. The finished Craft China exhibition will provide a medium to not only showcase these products but also sell them in the museum shop. The process of collaboratively working on these products with the researchers from University College London allows craft people to reflect on how they might tell the narratives of their traditions through exhibitions within their own localities. For designers and creatives, the chance to work as part of the Craft China project provides the opportunity to reflect on their own creative practice and what it means to be

a Chinese creative working between China and the UK. By connecting them with methods with which to understand their source communities, such as ethnography, they are able to have better relations with local stakeholders. Connecting them to museums like the Chinese National Museum of Ethnology or the Hangzhou Arts and Crafts Museum allows them the opportunity to showcase their work in major institutions and access to apply for prestigious government commissions.

In tracing the movements of actors and agents of China's Creative Economic Ecosystem, UK creatives wishing to work in China will have a better idea of how to find collaborations and partnerships. The model devised by the Craft China team and the Chinese National Museum of ethnology of creating exhibitions via ethnographic research, partnerships with craft designers and competitions searching for early career curators can be adopted by other museums wishing to make museum exhibitions more collaboratively. Many of the methods and research tools used in the project such as adopting an ethnographic perspective, dialogic workshops, museum walking tours can be converted into commercially viable tools for use in exhibition planning by heritage consultancies wishing to work in China.

Source: Project Findings and Impacts on UKRI Gateway to Research

Finally, three projects have shown how strategies for poverty alleviation, sustainable growth and alternate livelihood are often related to challenges concerning human rights, inequality reduction, and minorities' inclusion, such as: the consequences of conflict and displacement (ref. 14, 80); the protection of minority(ies') heritage and culture; and the urgency to problematise, explore and extend efforts to address slavery and modern forms of exploitation (ref. 75), which addresses SDG 8 (target 8.7).

In this framework, heritage, community memory, and arts-based methodologies play an important role not only for supporting economic growth but also for disrupting power dynamics and promoting social change.

Focus 12. Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan (ref. 14)

This multi-disciplinary research contributes to addressing the gap in the literatures on displacement, resilience, and entrepreneurship by offering a conceptual framework informed by the experiences of displaced Syrian artisan entrepreneurs, a population that remains largely invisible in the literature. To verify the research themes to be discussed with Syrian refugee artisans operating in Jordan, a focus group discussion was conducted with key informants and stakeholders operating within the cultural heritage craft sector in Jordan. This was followed by individual interviews with 40 Syrian refugee artisans, 20 Jordanian artisans, and 20 key informants (heritage craft business owners, established artisans, and NGO representatives). The collected data and its preliminary analysis has informed the design and development of a bespoke social enterprise training programme (available in Arabic and English) for 14 Syrian and 6 Jordanian artisans. From a policy perspective, the implications of this research focus upon the exclusion of Syrian refugee artisans from Jordan's formal economy and their potential contribution to the development of the Jordanian cultural heritage crafts sector.

To respond to the objectives of the GCRF and the ODA, this project is designed to maximise impact through capacity building, knowledge transfer, and policy development via academic and non-academic routes as follows:

- Academic Routes. Training four Jordanian postdoctoral researchers on active listening, research protocols, and qualitative data collection methods and techniques with vulnerable populations, and Syrian cultural heritage crafts and skills (…).

- Non-Academic Routes. Training six Jordanian trainers in social enterprise creation and mentoring, to deliver a bespoken training programme in Jordan, to Syrian and Jordanian artisans. Training and mentoring 6 Jordanian and 14 forcibly displaced Syrian artisans interviewed in this project, in social enterprise creation. This highlighted how registered social enterprises can help the artisans to organise their sector, support their work, protect their working rights, protect them from

exploitation, and give their products enhanced trade rights amongst other benefits. (…) The dissemination event held in Jordan was attended by stakeholders including potential research users such as non-governmental organisations (NGOs), governmental organisations, international agencies, charities and private sector organisations, Jordanian artisans and forcibly displaced Syrian artisans to network with each other and deliberate the overall results of the project to determine policy and action pathways for supporting the forcibly displaced artisan communities in the Arab world more effectively and efficiently.

Through the publication of the policy brief, a change campaign led by the King Hussein Foundation Information and Research Centre (IRC) is underway. This change campaign is focused upon sharing the policy and practice recommendations emerging from the project, with key policymakers in Jordan. This is being implemented through individual one-on-one informational meetings with key decision makers in Government as well as within Jordan's cultural heritage sector and international agencies working with Syrian refugees in Jordan. The project report, policy brief and social enterprise training toolkit for cultural heritage refugee artisans are available for download in Arabic and English at the project website: https://www.plymouth.ac.uk/research/syrian-artisan-entrepreneurship-project.

Source: Project Findings and Impacts on UKRI Gateway to Research

The effects of conflict and displacement on socio-economic development are well represented in a project that focuses on forcibly displaced Syrian artisans who left their trade and fled to Jordan following the eruption of the Syrian civil in 2011(see Focus 12). In a situation of extreme poverty (UNHCR 2016), forcibly displaced Syrian artisans have demonstrated how they adopt economic and cultural survival strategies to create their own pathways and networks through cultural heritage. Such strategies provide an improved livelihood for themselves and their families, though the artisans remain hugely vulnerable and at risk of deportation and/or imprisonment to the extent that they operate outside of Jordanian labour law and in the informal economy. The project has provided an important contribution to the social, economic and political vulnerabilities and resilience of forcibly displaced Syrian artisans and to understanding the impact of cultural appropriation through 'made in Jordan' Syrian cultural heritage products. Projects have demonstrated how the preservation of minorities' heritage—e.g. creole heritage (kweyol language, song, cuisine, arts and crafts, fashion), photographic archives of ethnic minorities in northeast China, Indigenous heritage—is valuable for reconnecting communities through a shared heritage, for example through community-outreach initiatives in minority villages and festivals (ref. 26, 42, 76). Beyond this, minorities' heritage can sustain alternative models of growth, promote tourism, and advance the creative industries in the arts and among marginalised communities and the diaspora.

Figure 9. Made in Jordan by Syrian Hands. Project: 'Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan' (ref. 14).

"Biodiversity for food and agriculture is indispensable to food security, sustainable development, and the supply of many vital ecosystem services. Biodiversity makes production systems and livelihoods more resilient to shocks and stresses, including to the effects of climate change. It is a key resource in efforts to increase food production while limiting negative impacts on the environment. It makes multiple contributions to the livelihoods of many people, often reducing the need for food and agricultural producers to rely on costly or environmentally harmful external inputs. (…) Many emphasise the role of diversification—using multiple species, integrating the use of crop, livestock, forest and aquatic resources, and conserving and managing habitat diversity at landscape or seascape scale—in promoting resilience, improving livelihoods, and supporting food security and nutrition". *FAO 2019, p. xxxvii*

Food Security and Sustainable Agriculture

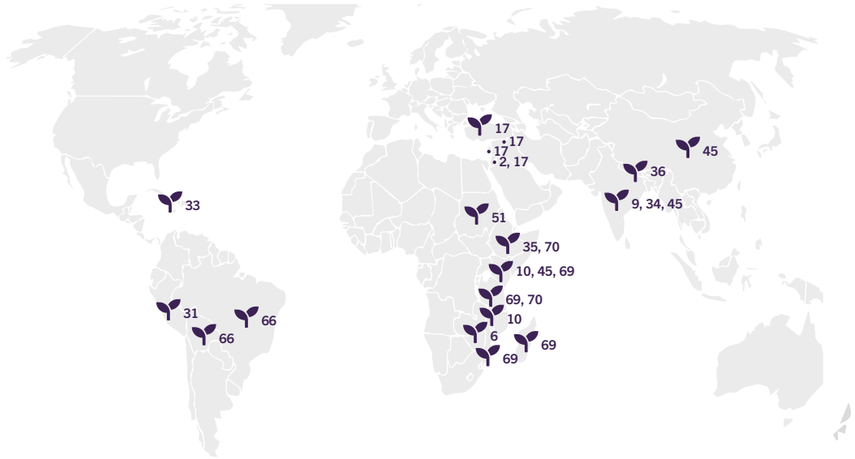
Today, more than 820 million people suffer from hunger and undernourishment, 135 million on account of man-made conflicts, climate change and economic decline (FAO et al. 2018, 2). Refugees, marginalised groups, and Indigenous Peoples are among the poorest and the most food-insecure. An increase in sustainable agricultural productivity and food production is needed to 'end hunger, achieve food security and improved nutrition' (SDG 2). The relevance of the Arts and Humanities in this context has been largely underestimated and under prioritised in favour of infrastructural, high-tech, and top-down agricultural investments to address immediate food and health security needs, which are often implemented in similar ways around the world without respect for the specificity of different contexts (ref. 17). Here, 15 GCRF and Newton research projects have demonstrated the importance of historical and long-term archaeological evidence (ref. 2, 70) to provide contextualised and locally informed solutions to face this global challenge and to address SDG 2 (target 2.4[23]). They have also shown how food culture—how food is understood, prepared, and consumed by communities—for global health and well-being (ref. 6, 10). Projects have enabled greater understanding of the role that traditional agricultural knowledge, crops, and farming practices as well as Indigenous food systems and local culinary memories—some of them rapidly disappearing and not yet documented (ref. 34, 51)—play in creating strategies for long-term agricultural resilience, food security and socio-economic development, adaptation in face of climate change (ref. 31, 33, 36), conflict and displacement, and economic and political shocks.

Focusing on a broad range of geographical areas, from Asia, to the Caribbean region, South America, Sub-Saharan Africa, and the Middle East, GCRF and Newton research projects have demonstrated the importance of local heritage, knowledge and practices and have advocated for their preservation at the same time. They have actively contributed to this goal by organising local and international workshops and field trips,

23 Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

awareness raising activities, and a wide dissemination of key findings (books, articles, booklets, etc.) to existing and new audiences including local schools, families and, more generally, local communities (see Case Study 7). They have also paid particular attention to the contribution of women's knowledge and practices to food security, sustainable agriculture, and farming practices (ref. 35, 51, Case Study 9 and Focus 13). Moreover, projects have given local communities, local organisations, and Indigenous Peoples' in particular the rare opportunity to develop an equitable dialogue with researchers and to share their knowledge, cultural values, and challenges (ref. 66, see Case Study 6). Local communities' knowledge and capacities have also been strengthened to better address food security needs. Finally, working as part of interdisciplinary teams and partnerships (including for example ethnobotanical, ethnographic and archaeological researchers as well as agricultural, indigenous and sustainability experts), has allowed projects to co-develop new networks, collaborations, and research approaches. The results of these interdisciplinary teams and partnerships have better informed and influenced agricultural research, risk management, policy debates and have also supported reconstruction and humanitarian programmes by using historical and contemporary evidence.

Infographic 8. Map with Worldwide Distribution of Projects Related to Food Security and Sustainable Agriculture (15 projects)



Ref.	Project Title	Country(ies)
2	A Multi-Isotope Base Map for Jordan: a Tool for Re-examining Movement and Community in the Past	Jordan
6	Building Transdisciplinary Partnerships for Exploring the Impact of Population Displacement on Nutrition Interventions	Zimbabwe
9	Changing Farming Lives in South India, Past and Present	India
10	Changing Food Systems in Kenya and Malawi	Kenya, Malawi
17	Cultures of Expertise: Academics in Exile and their Role in the Future Food Security Agenda for Syria (SyrianFoodFutures)	Syria, Turkey, Jordan, Lebanon
31	Fishing and Farming in The Desert'? A Platform for Understanding El Niño Food System Opportunities In The Context Climate Change In Sechura, Peru	Peru
33	Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region	Greater Caribbean Region
34	Forgotten Food: Culinary Memory, Local Heritage and Lost Agricultural Varieties in India	India
35	Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia	Ethiopia
36	HARVEST: High-mountain Asia – building Resilience to water Variability using Experiments, Surveys and accounts of Tradition	Nepal
45	Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience	Kenya, India, China
51	Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices, and Endangered Cultural Heritage	Sudan
66	Research Partnership for an Agroecology-Based Solidarity Economy in Bolivia and Brazil	Bolivia, Brazil
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
70	SOIL-SAFE: Employing Archaeological Insights in the Co-Design of Agricultural Soil Erosion Mitigation	Tanzania, Ethiopia

Focus 13. Changing Farming Lives in South India, Past and Present (ref. 9)

The project reveals that sustainable farming practices in this region are based on cumulative experience and knowledge stretching back over several generations. It also raises awareness of women smallholders' rich contribution to sustainable farming involving a range of cultural practices that have been largely ignored by development studies. This is achieved through the arts and humanities methodology of oral history showing how collaborative interviews recorded on audio and video are a powerful means of affirming women's voices and knowledge, while also amenable to being used for a range of educational and training purposes conducive to wider farming community empowerment.

The oral history research method also highlights the significance of particular cultural practices and performances derived from the past (songs, ceremonies, prayers, festivals) in the shaping of present-day modes of resilience. These findings are relevant to GCRF/ODA objectives as they support the welfare of farming communities in India, making a particular contribution to increasing gender equality and women's empowerment, and to strengthening community resilience as a means of tackling poverty reduction. They also address, from an arts and humanities perspective, GCRF/ODA concerns to preserve and learn from cultural memory and to promote sustainable heritage within rural contexts. The findings will be taken forward by the local partnering NGO, Green Foundation, in their training and awareness-raising work with farmers in the State of Karnataka on the possibilities and benefits of sustainable and organic farming, including gender equality in farming roles and responsibilities.

Source: Project Findings and Impacts on UKRI Gateway to Research and Response to PRAXIS Survey on Heritage for Global Challenges by Sandip Hazareesingh (Principal Investigator) and Sandip Pattanayak (Project Partner)

Figure 10. Women farmers in Kanakapura, Karnataka, India. Project: 'Changing Farming Lives in South India, Past and Present' (ref. 9).

"One of the things I have learnt from the archaeological records is that change is your only constant. The good thing is that we can look to the archaeological records and start to module things in relation to environment, in relation to cultural change and all of this sort of things. It is really useful in that regard. But what you can also see by modelling over the last 10,000 years is that the last 200 years, which is where we have seen a complete focus on economics and making everyone happy, is the moment all goes wrong (…). I think that we now have the opportunity to explore where we got things right, where we got things wrong, what were the unintended consequences". *Prof. Naomi Sykes, University of Exeter (ref. 35)*

Figure 11. Images from a mural at Coronation Market, Kingston's largest market. Project: 'Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating' (ref. 38). Photograph by Cornelia Guell.

"The right to health extends far beyond the health sector. It requires multi-sectoral responses that are grounded in human rights and give due attention to health in all policies, health promotion, and primary prevention. The determinants of health relate to several SDG targets, which form the core work of a range of non-health actors. Yet polices, regulations, and actions are compartmentalized across sectors, and institutions give insufficient attention to contradictions and connections. Further, some determinants that are difficult to address receive inadequate attention and/or investment. (…) Such joint action is critical for 'whole of government' and 'whole of society' mobilisation for health and well-being and sustainable development". *World Health Organisation 2018, p. 23*

Global Health and Well-Being

Promoting physical and mental health throughout the life course is essential to sustainable development. However, too many people, especially in LDCs and LMICs, are still afflicted by diseases such as HIV, malaria, and tuberculosis, by complications in pregnancy and childbirth and child mortality, and by polluted environments, undernourishment, and malnutrition (United Nations 2020, 28-31). People all around the world are also suffering from obesity, diabetes, and heart diseases as well as mental health issues, caused or intensified by unsustainable and stressful lifestyles. This is even more important now, as we face an unprecedented global health crisis due to COVID 19, which is strongly affecting worldwide people's health and destabilising economies and behaviours.

Health strategies often fail because they do not sufficiently take into consideration the cultural environment and values that shape communities' behaviours, choices, and practices. 13 GCRF and Newton research projects have shed light on the importance of local contexts and cultures as well as beneficiaries' involvement in developing culturally and geographically sensitive approaches and successful multifaceted interventions for tackling global health issues (SDG 3, target 3.4,[24] 3.d[25]). Projects have focused on the relationship between health and food security (SDG 2, target 2.2[26]), such as stunting and malnutrition (ref. 6, 17) and antimicrobial resistance in food systems (ref. 10), and on the impacts of urban foodscapes on healthy diets in the Caribbean (ref. 38). Equally, they have aimed at improving mental health and well-being of marginalised communities using the potential of a greater context sensitivity, local languages, and idioms and, more generally, of heritage, which is of tremendous value to local communities. Marginalised communities have included refugees and displaced and conflict-affected populations

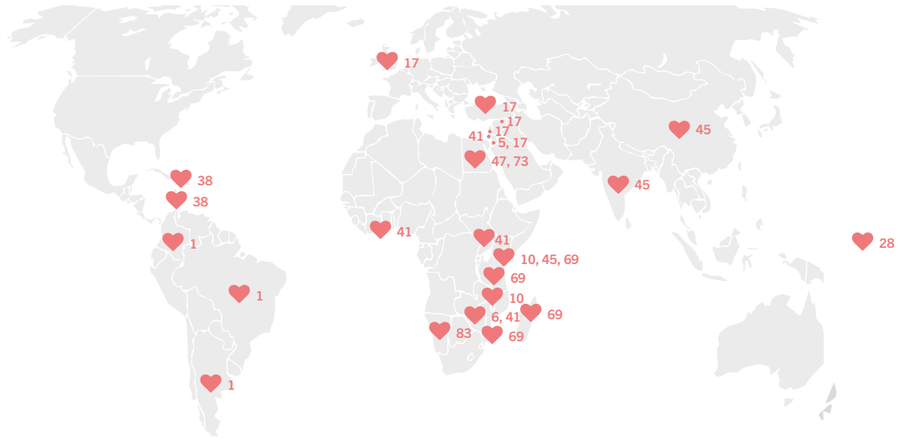
24 Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

25 Target 3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

26 Target 2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

in Jordan, for example, and people without access to psychotherapeutic services in countries such as Ghana, Uganda, Zimbabwe, and the Gaza strip (see Focus 14).

Infographic 9. Map with Worldwide Distribution of Projects Related to Global Health and Well-Being (13 projects)



Ref.	Project Title	Country(ies)
1	A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America	Brazil, Argentina, Colombia
5	Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage	Jordan
6	Building Transdisciplinary Partnerships for Exploring the impact of Population Displacement on Nutrition Interventions	Zimbabwe
10	Changing Food Systems in Kenya and Malawi	Kenya, Malawi
17	Cultures of Expertise: Academics in Exile and their Role in the Future Food Security Agenda for Syria (SyrianFoodFutures)	Syria, Turkey, Jordan, Lebanon, UK
28	Enduring Connections	Kiribati
38	Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating	Haiti, Jamaica
41	Idioms of Distress, Resilience, and Well-Being: Enhancing Understanding about Mental Health in Multilingual Contexts	Ghana, Gaza, Uganda, Zimbabwe
45	Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience	Kenya, India and China
47	Interdisciplinary Approach for the Management and Conservation of UNESCO World Heritage Site of Historic Cairo. Application to Al-Ashraf Street	Egypt
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
73	Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)	Egypt
83	Transnationalizing Modern Languages: Global Challenges	Namibia

Heritage research projects have demonstrated the value of interdisciplinary and innovative approaches for tackling health issues and linked these to agricultural approaches to improve nutrition quality and fight against antibiotic resistance, for example. These approaches also promote Indigenous knowledge and practices (see Case Study 6), show the potential of digital technologies to improve health and well-being of displaced communities (see Case Study 3), and support historical studies on the evolution of cultures and tastes in urban foodscapes. Where the projects have sought to understand historical factors and cultural norms and values in a given context, they have developed holistic, effective and sustainable approaches to tackling health issues, such as: improving sport accessibility for categories of people subjected to discrimination (see Case Study 1); addressing healthier food consumption and fostering societal (and health) change (ref. 38); increasing awareness of diseases and promoting multilingual education for reducing health issues (ref. 83); building confidence, community cohesion and a sense of ownership, and strengthening local capacities; and informing policymaking (e.g. on culturally sensitive and effective approaches to antibiotic stewardship). Finally, in their attempt to find a balance between heritage conservation and development, GCRF and Newton research projects have also contributed to improving people's health and well-being. This has been achieved through supporting the reduction of the impacts of contemporary infrastructures and other development projects on their environment and communities and implementing sanitation and waste management interventions (SDG 6,

target 6.a[27]) to improve local living conditions (ref. 47, Case Study 5, Case Study 9, and Case Study 10).

Focus 14. Idioms of Distress, Resilience, and Well-Being: Enhancing Understanding about Mental Health in Multilingual Contexts (ref. 41)

Building on 'Researching Multilingually at the Borders of Language, the Body, Law and the State project' project, this interdisciplinary research explores the way local languages are used to express distress and well-being and how capabilities can be developed by drawing on local idioms. In doing so, it focuses on Ghana, Gaza, Uganda, Zimbabwe, and new arrival refugees in Glasgow. Bringing together and comparatively analysing medical literature on mental health and in language studies and anthropology, this project has developed innovative ways of translating these idioms with greater sensitivity to the local environment in which they have emerged. An example includes the development of a theatre space at Noyam Institute for African Dance in Ghana and the development of devising methods multilingually for creative pieces which displays issues in Global Mental Health. Conducting ethnographic fieldwork in-situ and digitally, and using story-generating methodologies, research participants were encouraged to tell stories about their languages and their use of words in translingual contexts and research sites. In this production process of data sets for comparative linguistic analysis, careful attention was given to the refinement of story-generating as means of data collection respecting the well-being of research participants and their feelings of distrust towards this kind of research methodology.

The research findings demonstrate how indigenous, multilingual, and mother tongue knowledge of idioms of distress, wellbeing, and resilience can contribute to and enhance mental wellbeing and resilience in contexts of displacement and distress, especially where there is mental health stigma and/or no access to psychotherapeutic services. The use of language story-generating methodologies has allowed a greater flexibility and sensitivity to the experience of researching multilingually in contexts of conflict or duress, enhancing local cultural practices and intangible cultural heritage at risk. The translation of linguistic data into artistic expressions and performances has been used for creating wider impacts through intercultural and multilingual training and human development activities in each context. Finally, the research findings raise awareness and inform organisations working with refugees and displaced people in particular, on the importance of multilingual sensitivity for working cross-culturally in populations under duress, pain and pressure, but for whom mental health interventions may not (yet) be necessary.

Source: Interview with Alison Phipps (PI), University of Glasgow and Project Findings and Impacts on UKRI Gateway to Research

27 Target 6.a: By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.

Figure 12. Artwork on the exterior of an Ital Food restaurant, Negril, Jamaica. Project: 'Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating' (ref. 38). Photograph by Matthew Smith.

"There is an urgent need to address the systemic drivers of malnutrition in Small Island Developing States with little food sovereignty and increasingly unhealthy foodscapes. Understanding in what way social, political, and economic determinants of health have historically evolved, and how these maps onto historical changes to local and global food systems, can help governments frame policies that can address these broader complex challenges". *Dr. Cornelia Guell, University of Exeter (ref. 38)*

Figure 13. Images from a mural at Coronation Market, Kingston's largest market. Project: 'Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating' (ref. 38). Photograph by Cornelia Guell.

"Indigenous Peoples and local communities deserve special attention when considering the diverse values of nature. Many Indigenous and local communities are reliant on biodiversity and have a particular relationship with their landscapes and seascapes. They do not necessarily see a distinction between humans and nature, and often accord deeply spiritual importance to animals and plants. Within this cultural context, efforts to put an economic value on biodiversity or even to actively manage biodiversity for conservation can be deemed highly offensive. Moreover, much of Western conservation philosophy perceives a clear separation between humans and nature, with human impacts on biodiversity automatically seen as detrimental. For Indigenous Peoples, however, human interaction with nature is crucial for both the natural and social worlds. Conservation actions that aim to limit human interactions with biodiversity may therefore risk severing indigenous connections to nature. Such diverse values need to be explored and mutually understood if conservation activities are to be acceptable and equitable for all". *UNESCO 2018, p. 14*

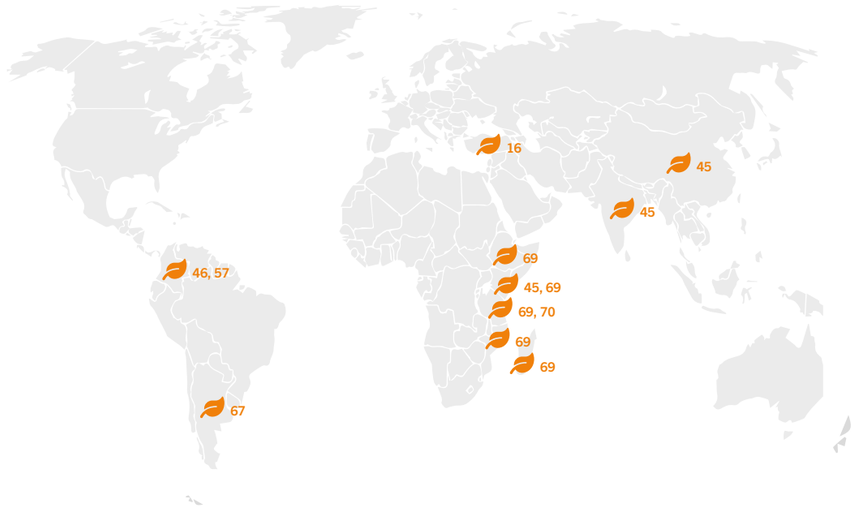
Sustainable Management of Landscapes, Ecosystems, and Biodiversity

The depletion of natural resources and the adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity, and loss of biodiversity, jeopardizes nature's vital contributions to humanity, endangering economies, livelihoods, food security, cultural diversity and quality of life, and constitutes a major threat to global peace and security (UNESCO 2018, 7; United Nations 2015, Par. 14, 33). They also exacerbate inequalities as the most vulnerable populations are the most affected. Therefore, it is essential to safeguard the planet's biodiversity and to keep ecosystems resilient not only for their intrinsic natural value, but also because they are a crucial contributor to poverty eradication, food security, health, human dignity, and wellbeing (UNESCO 2018, 10).

Heritage is a fundamentally of environmental conservation, natural resource management, and biodiversity maintenance, through connecting social and cultural issues to environmental concerns (UNESCO 2012, 24). The concept of landscape, for example, defined as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe 2000, Art. 1) provides a way to connect cultural heritage (tangible and intangible) and natural environments in mutually supportive ways. Cultural heritage encompasses traditional ecological knowledge[28] and practices, identity and sense of place, rituals and beliefs, and local and Indigenous Peoples' ways of life, world views,

28 "Traditional knowledge can be understood as a living body of knowledge that is developed, sustained and passed on from generation to generation within a community, often forming part of its cultural and spiritual identity. It encompasses knowledge, know-how, skills, innovations and practices. Traditional knowledge also encompasses traditional cultural expressions or expressions of folklore. These can be, for example, dances, songs, handicrafts, designs, ceremonies, tales, or other artistic or cultural expressions" (United Nations Human Rights Council 2015, Para. 58).

Infographic 10. Map with Worldwide Distribution of Projects Related to Sustainable Management of Landscapes, Ecosystems, and Biodiversity (7 projects)



Ref.	Project Title	Country(ies)
16	Cultural Heritage in Landscape: Planning for Development in Turkey	Turkey
45	Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience	Kenya, India, China
46	Integrating Ecological and Cultural Histories to Inform Sustainable and Equitable Futures for the Colombian Páramos	Colombia
57	Provisioning of Ecosystem Services And CultuRAl Values in the MOntane tropics	Colombia
67	Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia	Argentina
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
70	SOIL-SAFE: Employing Archaeological Insights in the Co-Design of Agricultural Soil Erosion Mitigation	Tanzania, Ethiopia

achievements and creativity.[29] These factors are all strongly interrelated and indivisible from the biogenetic diversity of landscapes (see Case Study 6 and Case Study 7). Nevertheless, there is still a need to bridge the nature/culture divide and to strengthen human/nature relationships to fully reflect the diverse and nuanced relationships between communities and their local environments as well as to promote more effective environmental conservation and management strategies (Larsen and Wijesuriya 2015). The failure of international and national policies to link culture and environment has exacerbated this division, as the way governments typically organise their internal structures. This, in particular, has not recognised the potential of heritage to address SDGs 14 and 15, the most relevant for the sustainable protection, restoration, and use of terrestrial and marine ecosystems and biodiversity. Nevertheless, GCRF and Newton research projects have demonstrated how heritage can be harnessed to address a broad range of SDGs closely linked to the sustainable management of landscapes, ecosystems, and biodiversity: SDG 2 (target 2.5[30]), SDG 14 (target 14.2[31]), SDG 15 (target 15.1,[32] 15.4,[33] 15.5[34] and

29 "Indigenous peoples' cultural heritage includes tangible and intangible manifestations of their ways of life, world views, achievements and creativity, and should be considered an expression of their self-determination and their spiritual and physical relationships with their lands, territories and resources. While the notion of heritage encompasses traditional practices in a broad sense, including language, art, music, dance, song, stories, traditional games and sports, sacred sites, and ancestral human remains, for Indigenous Peoples the preservation of heritage is deeply embedded and linked to the protection of traditional territories. Indigenous cultural heritage is a holistic and inter-generational concept based on common material and spiritual values influenced by the environment. It also includes bio-cultural heritage and traditional food production systems such as rotational farming, pastoralism, artisanal fisheries and other forms of access to natural sources" (United Nations Human Rights Council 2015, Para. 6).

30 Target 2.5: By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

31 Target 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

32 Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

33 Target 15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.

34 Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

15.9[35]), but also SDG 11 (target 11.4[36]), SDG 6 (target 6.6[37]), SDG 7 (target 7.a[38]) and SDG 12 (target 12.8,[39] 12.a[40] and 12.b[41]).

Landscapes are constantly changing as a result of human and natural processes and tensions regarding their management and governance persist. Yet the environment is typically considered as a technical issue, without proper attention to cultural and socio-economical aspects. Bringing together interdisciplinary researchers from natural sciences and humanities, seven GCRF and Newton projects—of which one was funded by the Natural Environment Research Council (NERC)—have explored human-nature interactions and landscape change over time to inform future planning, management and governance in Turkey, Latin America, Sub-Saharan Africa and beyond. These projects have provided insights into landscape transformation, to identify and implement effective methods for managing change including public engagement and participation to interpret landscape values. They have also shown that a historical analysis of how ecosystems have been transformed by driven by environmental, social, political, and cultural factors can predict possible changes in the future and can inform sustainable development strategies (ref. 46, 70). Interdisciplinary and innovative techniques—like the Historic Landscape Characterisation (HLC)—have been developed through GIS-based modelling and future transformation scenarios based on historic character analysis. This serves to address the landscapes' challenges and negative impacts caused by economic development and social transformation and to inform positive landscape planning and management (ref. 16). The projects have aimed to develop ground-breaking approaches to incorporate and maximise the links between biodiversity, ecosystem services, and cultural values in natural resource management and in the design of environmental conservation programmes (ref. 57). The research findings are particularly relevant also for fostering adaptation to climate and environmental change and more sustainable and equitable futures. They can inform national and local environmental authorities in developmental decisions in contexts such as uncontrolled development and urbanisation, energy infrastructures, farming, illegal mining, climate change, and shortages in water supply (see Focus 15) and Case Study 9).

35 Target 15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

36 Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

37 Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

38 Target 7.a: By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.

39 Target 12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

40 Target 12.a: Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.

41 Target 12.b: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

"Indigenous Peoples' ancestral wisdom provides empirical place-based knowledge that is crucial for biodiversity conservation, climate resilience, and sustainable development, but this knowledge has been widely disregarded and is fast disappearing. Indigenous Peoples need to be empowered to sustain their unique cultures and knowledge systems". *Krystyna Swiderska, International Institute for Environment and Development (ref. 45)*

Focus 15. Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia (ref. 67)

The research highlights the interconnected histories of landscape conservation and alternative energy production in the region. It shows how developments in one field have impacted on the other, and suggests ways in which conservation practices might be implemented on a 'whole of landscape' scale and better integrated with attempts to develop alternative energy sources in the region. These issues have been communicated directly to researchers, stakeholders and policymakers involved in both nuclear energy development and biodiversity conservation/protected area management in the region through an international and interdisciplinary workshop hosted in Chile and exhibition. The workshop contributes to capacity building by bringing together an innovative network of scholars across the region to explore possible cross disciplinary research on areas of shared interest and ready researchers for future international collaborations on relevant funding calls for larger projects.

The findings will be taken forward directly by the Restricted Access Research Network and by the Municipality in implementing the recommendations of the Isla Humuel Conservation Management Plan. The contributions to the Conservation Management Plan contribute directly to SDG 15 – 'Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss' and Target 11.4 which highlights the need to 'strengthen efforts to protect and safeguard the world's cultural and natural heritage'. The findings will be also potentially be taken forward by visitors to the exhibition which was hosted at the Balseiro Institute. We expect to see this materialise in the form of future research and engagement partnerships and activities in future years.

Source: Project Findings and Impacts on UKRI Gateway to Research

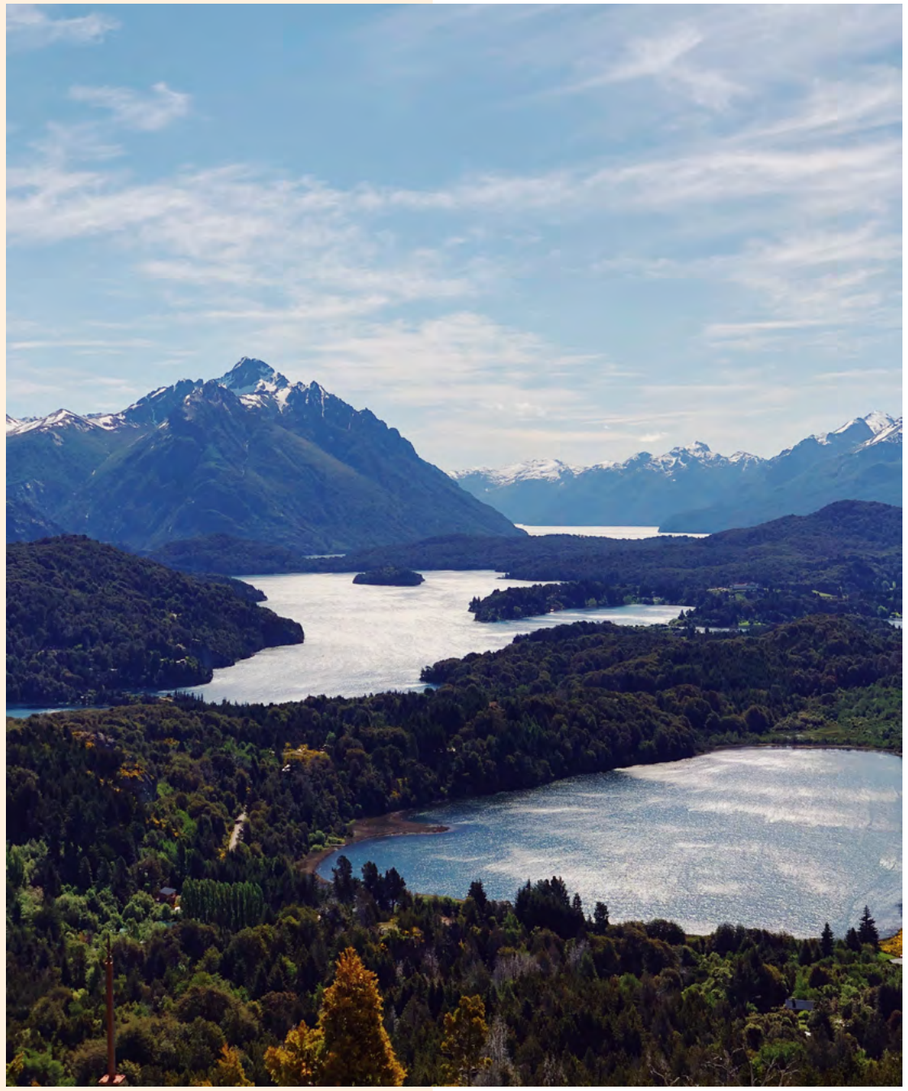


Figure 14. Landscape of San Carlos de Bariloche, Argentina. Photograph by Thayran Melo on Unsplash.

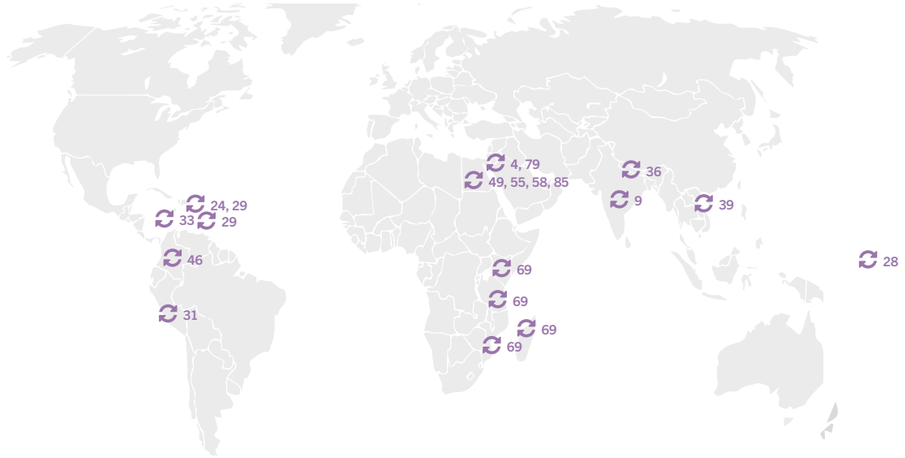
"Climate change is one of the greatest challenges of our time, expresses profound alarm that the emissions of greenhouse gases continue to rise globally, remains deeply concerned that all countries, particularly developing countries, are vulnerable to the adverse impacts of climate change and are already experiencing an increase in such impacts, including persistent drought and extreme weather events, land degradation, sea level rise, coastal erosion, ocean acidification and the retreat of mountain glaciers, further threatening food security, water availability, and livelihoods, and efforts to eradicate poverty in all its forms and dimensions and achieve sustainable development, recognizes the substantial risks posed by climate change to health, and emphasizes in this regard that mitigation of and adaptation to climate change represent an immediate and urgent global priority". *United Nations General Assembly 2019, Para. 1*

Adaptation to Climate and Environmental Change

Climate change is one of the greatest challenges of our time: global warming is causing the rise of extreme weather events and natural disasters, declining diversity of life on earth, increased disease and threats to health, loss of lives, mass displacement, and major impacts on livelihoods and rights (United Nations General Assembly 2020, Para. 6). ODA countries are particularly affected by change, which is a constant struggle and impacts not only on communities' livelihoods, food security and sustainable agriculture and the sustainable management of landscapes, ecosystems, and biodiversity, but also the richness and diversity of their heritage and the values associated with it (ICOMOS 2019). Climate change also impacts on the human rights (including cultural rights) of billions of people, 'posing particular threats to the rights and cultures of populations of low-lying Small Island Developing States (SIDS), Indigenous Peoples, rural people, women, persons with disabilities, those living in poverty and others' (United Nations General Assembly 2020, Paras. 2,7). Nevertheless, the implications of climate change for cultural rights have been too often overlooked (United Nations General Assembly 2020, Para. 14).

Figure 15. Panorama from the air of Tran An. Project: 'Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)' (ref. 39). Photograph by Thorsten Kahlert.

Infographic 11. Map with Worldwide Distribution of Projects Related to Adaptation to Climate and Environmental Change (16 projects)



Ref.	Project Title	Country(ies)
4	Augmenting Jordanian Heritage	Jordan
9	Changing Farming Lives in South India, Past and Present	India
24	'Disaster passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters	Monserrat
28	Enduring Connections	Kiribati
29	Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat	St Vincent, Monserrat
31	Fishing and Farming in the Desert'? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change in Sechura, Peru	Peru
33	Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region	Greater Caribbean Region
36	HARVEST: High-Mountain Asia – Building Resilience to Water Variability using Experiments, Surveys and Accounts of Tradition	Nepal
39	Human Adaptation to Coastal Evolution: Late Quaternary evidence from Southeast Asia (SUNDASIA)	Vietnam
46	Integrating Ecological and Cultural Histories to Inform Sustainable and Equitable Futures for the Colombian Páramos	Colombia

Ref.	Project Title	Country(ies)
49	LABYRINTH: Conservation, Analysis and Virtual Reconstruction of the Archaeological Site of Hawara Pyramid and Labyrinth (El Fayoum)	Egypt
55	Monitoring Object and Visitor Environments (MOVE)	Egypt
58	Past Environments, Future Challenges: Fossil Insects and the Preservation of Environmental Evidence from Egyptian Archaeological Sites	Egypt
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
79	The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village	Jordan
85	Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo	Egypt

"The partnership brings together a broader multi-disciplinary network of academics and community partners who have not yet had the opportunity to work together and learn from one another. Driven by the call for interdisciplinarity in responses to environmental challenges such as those posed by climate change and food insecurity, we bring together insight and expertise from in law, sociology, political science, ecology, and economics & philosophy. Our collaboration responds to a lack of such visible collaboration between these disciplines in addressing such problems, and in so doing we hope to make a significant contribution to the interdisciplinary field of sustainability science as applied to problems of food insecurity arising from the complex interaction of social, political, and environmental changes".
Dr. Jessica Paddock, University of Bristol (ref. 33)

Sixteen GCRF and Newton projects have focused on the centrality of human-nature interaction to tackle climate change and foster communities' resilience, thereby demonstrating how heritage can address SDG 2 (target 2.4[42]), SDG 13 (target 13.1,[43] 13.2, 13.3,[44] 13.b[45]) and SDG 15 (target 15.3[46]). Five projects have highlighted how SIDS and coastal areas are particularly affected by climate change, such as sea level rise, flooding, hurricanes and storm surges (ref. 24, 28, 29, 33 and Case Study 5). These events are reshaping the relationship between land, sea, and people and compromising access to clean water, food security, and adequate waste management, among others. In this context, culturally sensitive strategies for adaptation to climate and environmental change need to be combined with actions aimed at fostering disaster response and resilience, sustaining local livelihoods and preserving local heritages (ref. 24, 29 and Case Study 9). However, the implementation of top-down interventions has frequently paid little attention to local contexts, history, cultures, and communities, and especially to those who are often marginalised, such as Indigenous People, women, and elder and younger generations. Research projects have addressed this global challenge by organising interdisciplinary collaborative workshops to influence local policies and actors towards finding effective adaptation and mitigation approaches that can ultimately tackle climate change and food insecurity (ref. 33). These workshops are led and hosted by local communities to share local histories and experiences, giving them a central role in the knowledge co-production process. In addition, GCRF and Newton research projects have co-designed community-level programmes connecting heritage and climate change, using experimental and participatory approaches. The projects have raised awareness of safeguarding heritage at risk by using creative and artistic methods such as video-making and exhibitions (ref. 9, Case Study 4 and Case Study 5).

42 Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

43 Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

44 Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

45 Target 13.b: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.

46 Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

> "The general absence of cultural heritage from the climate discourse has a practical, correlative reality: while the culture and heritage sectors are important institutions in most communities, they often are not directly engaged in the work of climate action (although there are notable exceptions). Despite the profound connections between climate change and natural and cultural heritage, today there are thousands of archaeologists, architects, historians, and engineers; scientists, researchers, teachers, and scholars; carriers of Indigenous Knowledge and Local Knowledge, and heritage advocates, whose talents have not yet been mobilized on climate change issues. Perversely, this lost opportunity is often greatest in cities and regions with ambitious climate action pledges". *ICOMOS 2019, p. 6*

Heritage, however, is not only a resource to be protected and transmitted to future generations. It is also an invaluable knowledge base for a sustainable future. Five GCRF and Newton projects have shed light on the potential of long-term archaeological and heritage datasets to inform and support human adaptation and contemporary responses to climate change (ref. 31, 36, 39, 46 and 58). Examples of long-term datasets include: the study of prehistoric human and environmental adaptation to changing sea-levels in Vietnam (see Focus 16); the study of organic materials (fossil insects) from Roman and post-Roman archaeological remains (ref. 58); and the study of human responses and adaptation to climate change, rainfalls, flooding, and water shortages in extreme environmental settings like the arid and desert settings in South America (ref. 31) and the glaciers and snowfields of the Himalayan mountains (ref. 36). Finally, research projects have demonstrated the potential of digitalisation, innovation, and technology to record, preserve, reconstruct, and share, for example through 3D modelling and augmented

reality, especially following natural disasters (ref. 4, 49, 79, 85). They have also outlined how specific technologies (e.g. remote sensing, laser scanning, and sensors) can be used to record existing environmental conditions and monitor future changes indoors (e.g. in museums) and outdoors, as well as to inform future conservation scenarios and recovery models (ref. 39, 49 and 55).

Figure 16. Examining a sediment core from the Vung Chay valley in the Trang An. Project: 'Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)' (ref. 39). Photograph by Shawn O'Donnell.

Focus 16. Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA) (ref. 39)

The project is centred on the Tràng An World Heritage Site, located on the South-West margin of the Red River Delta in Vietnam. SUNDASIA's research programme is using archaeological and palaeoecological evidence, combined with remote sensing technology and pedestrian survey to explore human and environmental responses to prehistoric sea-level rise, and how that knowledge can help in meet challenges posed by today's changing global climate. The work has been made possible through formal collaboration between Bournemouth University, Vietnam Institute of Geoscience & Mineral Resources, Trang An Management Board, University of Cambridge, and through key partnerships with the Ninh Binh People's Committee, Ninh Binh Department of Tourism, Vietnam Academy of Social Sciences, Queen Mary, University of London, Oxford University Museum of Natural History, and the Xuan Truong Construction Enterprise. Examples of achievements by the project include an expanded inventory of past sea-level indicators (i.e., erosional wave-cut notches) and high-accuracy elevation data that will be available to user communities (the beta version of the GIS database was published in February 2020). These data will make it possible 1) to help refine regional models of sea-level change in a part of the world where the future impact of sea-level rise is marked; 2) enable time-increment-based sea-level change and its effects on the Tràng An World Heritage site in particular—providing a valuable tool to local managers and policymakers when setting sustainable development and conservation goals.

Paleoenvironmental reconstruction work by the project highlights the impact of past marine incursions (especially the Mid-Holocene high stand) into the Tràng An massif. This is contributing to a more informed deep time understanding of biodiverse tropical limestone forest ecosystems. For example, its apparent resilience to past extreme climate and environmental change means such settings may be well-suited to persist through present and future human-induced climate change impacts. This raises the possibility that they (as well as other similarly resilient ecosystems) could become a focus for conservation and sustainable development efforts. The paleoenvironmental work has further shown that mangrove forest survived in an enclosed valley within Tràng An long

after the Mid-Holocene coast had retreated from this location. Specifically, mangrove taxa were present from 8,100 to as recently as 250 years ago. This demonstrates the potential viability of this and similar sheltered sub-coastal karst settings to be managed as areas of mangrove rehabilitation and future coastal stabilisation measures. It also paves the way for encouraging economic pathways for local communities in the maintenance of this landscape and its continued role as an ecotourism destination. In addition to scientific publications on this and other results, the project is exploring the use of video abstracts to broaden audience exposure to its findings.

Zooarchaeological studies by the project highlight how the current faunal community, even in a protected reserve like Tràng An, is impoverished compared to the breadth of the animal community present there in prehistory. This emphasises the impact (to a great degree within the last generation or so) of human pressure, but it goes beyond this. 1) Habitat resilience notwithstanding, what remains unknown are the implications that this precipitous drop in animal (especially mammal) biodiversity will have on the long-term ecological stability and sustainability of this location and others like it. 2) More positively, data on past species occurrence and distribution can provide strong grounds for species reintroduction or habitat rehabilitation. With respect to reintroduction efforts specifically, SUNDASIA has contributed expertise and resources (including a GCRF Global Impact Acceleration Award for conservation training of 62 local staff, an exhibition, and TV documentary) to support the trial reintroduction of a Critically Endangered endemic primate (the Delacours langur) into Tràng An.

AHRC Follow-On Funding has been sought (outcome pending) to enable cultural heritage training of a further 70 local staff and preparation of novel public engagement in an exhibition context based on SUNDASIA outcomes. These activities will hopefully form key elements in a 5-year cultural heritage programme being prepared by the Tràng An Management Board in response to World Heritage Committee requests regarding provision for archaeological heritage management and promotion.

Source: Response to PRAXIS Survey on Heritage for Global Challenges by Ryan Rabett (Principal Investigator)

Figure 17. Excavations in Hang Moi Trang An. Project: ‘Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)’ (ref. 39). Photograph by Thorsten Kahlert.

"Disasters, many of which are exacerbated by climate change and which are increasing in frequency and intensity, significantly impede progress towards sustainable development. Evidence indicates that exposure of persons and assets in all countries has increased faster than vulnerability has decreased, thus generating new risks and a steady rise in disaster-related losses, with a significant economic, social, health, cultural, and environmental impact in the short, medium and long term, especially at the local and community levels. (…) It is urgent and critical to anticipate, plan for and reduce disaster risk in order to more effectively protect persons, communities, and countries, their livelihoods, health, cultural heritage, socioeconomic assets, and ecosystems, and thus strengthen their resilience". *UNISDR 2015, Paras. 4-5*

Disaster Response and Resilience

Natural and man-made disasters such as conflict, terrorism, and violent extremism have tremendous physical, environmental, economic, and social impacts, including the loss of lives and livelihoods, displacement, and the destruction of the built environment as well as destroyed, damaged, and fragmented heritage. Ten GCRF and Newton research projects have demonstrated how Arts and Humanities research can be mobilised to address three SDGs particularly relevant in this context: SDG 11 (target 11.4[47] and 11.b[48]), SDG 13 (target 13.1[49]) and SDG 1 (target 1.5[50]). Previous sections have already shown how natural hazards and other disasters often co-exist with the need to adapt to climate and environmental change, and how digitalisation, innovation and technology can assist in the transmission to future generations of heritage that might be lost or damaged (ref. 4 and 79). This section aims to underline how heritage research has also contributed to disaster response, risk reduction, and strengthening the resilience of communities affected by crises.

Three GCRF and Newton projects have contributed to mitigating the impacts of earthquakes and seismic hazards. In Egypt, for example, a project has designed and tested an innovation in earthquake engineering that introduces a vibrating barrier (ViBa) into the ground without altering the ancient structures (ref. 62). This serves to mitigate heritage damage from seismic risk and any consequent invasive solutions and structural alterations. Once completed, the project will provide guidance to Egypt's government to adopt appropriate preservation techniques using ViBa devices to protect its heritage structures from the damaging effect of earthquakes. Two other projects have focused on

47 Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

48 Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

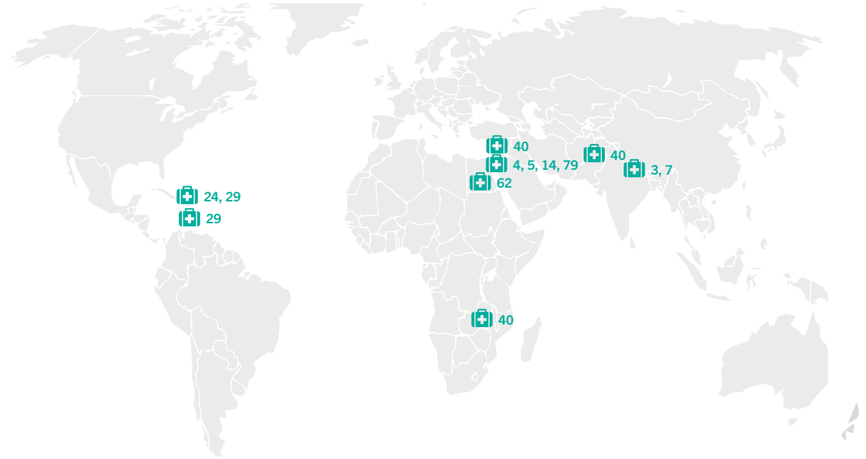
49 Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

50 Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

the devastating effects of the earthquakes that occurred in Nepal in 2015, when nearly 9000 lives and half a million homes were lost and hundreds of historical and cultural monuments were destroyed or extensively damaged, including World Heritage sites in the Kathmandu Valley (Government of Nepal 2015). Nepali cultural heritage plays an important part in local communities' daily life and is also a major source of economic income and employment through tourism. Rapid heritage reconstruction appears to be a political, social, and economic priority. However, finding appropriate ways for heritage reconstruction and rehabilitation is not always straightforward, particularly in emergency interventions which can result in additional unintended damage to heritage buildings. Heritage research has informed strategies for reconstruction and disaster response providing detailed structural, scientific, and historical analyses and recordings.

Figure 18. Artisan Fishermen taking advantage of opportunity fishing, using traditional rafts on the shore of Laguna La Niña a huge expanse of temporary water that appears after El Niño flooding in the Sechura desert. Project: Fishing and Farming in the Desert'? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change in Sechura, Peru (ref. 31).

Infographic 12. Map with Worldwide Distribution of Projects Related to Disaster Response and Resilience (10 projects)



Ref.	Project Title	Country(ies)
3	After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster	Nepal
4	Augmenting Jordanian Heritage	Jordan
5	Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe Project	Jordan
7	Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage, and Subsurface Heritage Protection Protocols in Kathmandu	Nepal
14	Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan	Jordan
24	'Disaster passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters	Monserrat
29	Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat	St Vincent, Monserrat
40	Humanities for Resilience	Zambia, Pakistan, Lebanon
62	Preserving Egypt's Cultural Heritage from Earthquake Damage through Vibrating Barriers (ViBa)	Egypt
79	The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village	Jordan

This work has increased understanding of the broader tangible and intangible effects of the earthquakes on Nepali society, especially in relation to political and socio-cultural changes. In addition, it has documented and analysed Nepal's historical responses to earthquakes, including inadequacies in the design and construction of integrated settlement models for re-housing impacted communities, controversies in heritage reconstruction, and the memorialization of the 2015 earthquakes in creative outputs (e.g. poetry, songs, monuments, etc.). The goal has been to strengthen resilience using historical, cultural, and political understandings as a normative framework to shape responses to future disasters and their aftermaths, broadly disseminating research results and increasing public awareness (see Case Study 2). Equally, the work has provided in-depth archaeological recordings on the foundations of the collapsed Kasthamandap in Kathmandu as well as heritage-protocols and training for assisting post-earthquake reconstruction plans starting from rescue archaeology (see Focus 17). The research findings and recommendations have supported the Department of Archaeology of the Government of Nepal to take action to better react to these events in the future and developed a process of co-production in designing post-disaster responses.

Other GCRF and Newton projects have explored how to better strengthen people's resilience, which, especially in the context of natural disasters and climate change, is an integral part of sustainable development. One project has planned to strengthen the capabilities of communities affected by crisis by organising a series of international workshops in the UK, Zambia, Pakistan and Lebanon and involving worldwide participants to discuss 'ways of living' approaches to resilience and how resilience can be fostered by a greater understanding of experiences and interactions in diverse situations (ref. 40). Two other projects have focused on the role of community resilience and responses in disaster-risk management in the Caribbean region, frequently afflicted by hurricanes, volcanic events and other natural hazards. They have explored how the response to, and recovery from, volcanic events has been shaped by cultural memory and community narratives. These projects have conducted a historical systematic and comparative investigation of local populations' responses to natural hazards through literary records, oral traditions, and histories, songs and other artistic expressions as well as interviews and focus groups with local communities (ref. 29). By analysing local narratives, they have revealed how

"Storytelling is a rich archive of social and cultural experiences and as such is historically and geographically specific and inherently political. By analysing these stories—in their different forms, from family narratives, through 'jumbie' stories, to song and written poetry—our research reveals the extent to which contemporary responses to disaster management exists within the living legacy of slavery and colonial power structures. In this way the volcano and the threat of eruption moves between the experiential and the metaphorical, the geological and the cultural. These archives—these alternate sets of knowledges—enrich understanding of peoples' relationships to place and thus understanding of scientific and social volcanic risk and other natural hazards as well as helping to rebalance the hierarchical structures of knowledge production, with scientists being storytellers, too". *Key Findings of 'Explosive Transformations' (ref. 29) on UKRI Gateway to Research*

contemporary responses to disaster risk management are still connected to the legacy of slavery and colonial power structures. Moreover, through co-designing an exhibition and a website with local communities, they have also highlighted the importance of the involvement of local communities in risk preparedness and recovery. Such projects demonstrate that cultural and historical knowledge is a precious resource for disaster risk management, which can inform policies and support the shaping of effective recovery strategies, taking into account cultural, social, economic, and environmental aspects at the same time (see Case Study 4).

"Enhancing access to valued heritage can be a valuable entry-point and process for enabling fragile, displaced or conflict-affected communities to build resilience". *Prof. Owen Greene, University of Bradford (ref. 5)*

Focus 17. Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage, and Subsurface Heritage Protection Protocols in Kathmandu (ref. 7)

The earthquakes which struck Nepal in 2015 caused a human catastrophe. Not only did they inflict loss of life and livelihoods, they destroyed substantial parts of Kathmandu's unique UNESCO World Heritage site. (…) Having discussed challenges and opportunities with stakeholders in Kathmandu, it is clear that the current focus on the rehabilitation of architectural superstructures has resulted in additional damage to Kathmandu's World Heritage site. This has largely gone unnoticed as it entailed damage to subsurface archaeological heritage, even though this heritage is protected by national legislation. Emergency interventions badly damaged some buildings but, whilst they were driven by recovering the injured and dead, more recent damage relates to non-emergency activities, including engineering contractors cutting exploratory trenches and drilling soil cores, workmen cutting foundations, soldiers deliberately collapsing monuments, and engineers dismantling others. All of these events had a common absence of in-situ archaeological recording and the absence of consultation with trained professional archaeologists beforehand. (…) It is worth noting that this situation is common across South Asia and there is a capacity deficit in urban and rescue archaeology, despite being located in a region whose built heritage is prone to risks from both seismic events and rapid urbanisation.

Following requests from the Government of Nepal and ICOMOS (Nepal) and responding to AHRC's Follow on Funding 'Notice for International Development', the research aims to build on the success of the 'Outstanding' graded AHRC-funded research in Sri Lanka to conduct a practical field training workshop with non-academic collaborators to focus on learning from the evaluation of the foundations of the collapsed Kasthamandap in Kathmandu and as well as on salvaging material to assist post-earthquake plans for its reconstruction and to offer an exemplar for strengthening and disseminating post-disaster subsurface heritage protocols within post-earthquake Kathmandu. (…) The reports and recommendations from the Project have been submitted to the Department of Archaeology, Government of Nepal (DoA) for their information and action. The methodologies have already been used by the DoA to conduct their own post-disaster rescue excavation prior to a major engineering intervention at the Basantapur Palace in Hanuman Dhoka. The reports and recommendations are also being taken forward by the expert panel tasked with the reconstruction of the Kasthamandap and they have already rejected a potentially highly damaging placing of new intrusive foundations for the reconstruction. We have also offered post-disaster rescue clearing training to members of the Nepal Army, Nepal Police, and Armed Police Force in order to better react to such events in the future. We have now successfully transferred this methodology to the post-conflict environment of Jaffna Fort in northern Sri Lanka. The research has now contributed to the rebuilding of the Kasthamandap.

Source: Project Abstract, Findings and Impacts on UKRI Gateway to Research

"Central to the rights of minorities are the promotion and protection of their identity. Promoting and protecting their identity prevent forced assimilation and the loss of cultures, religions, and languages—the basis of the richness of the world and therefore part of its heritage. Non-assimilation requires diversity and plural identities to be not only tolerated but protected and respected. Minority rights are about ensuring respect for distinctive identities while ensuring that any differential treatment towards groups or persons belonging to such groups does not mask discriminatory practices and policies. Therefore, positive action is required to respect cultural, religious, and linguistic diversity, and acknowledge that minorities enrich society through this diversity". *United Nations Office of the High Commissioner on Human Rights 2010, p. 8*

Human Rights, Inequality Reduction, and Minorities' Inclusion

Sustainable development cannot be achieved if the most vulnerable people—children, youth, persons with disabilities, people living in poverty or affected by HIV/AIDS, older persons, Indigenous Peoples, refugees, internally displaced persons, migrants, and other minorities and marginalised groups and individuals—are not empowered (United Nations 2015, Para. 23). Complex humanitarian emergencies, conflict, and terrorism further increase social inequalities and make the realisation of the peoples' right to self-determination more difficult, especially when living under colonial and foreign occupation which affects their economic, social, and environmental conditions (United Nations 2015, Para. 35). Gender-based and sexual violence is another element that continues to forge and reproduce inequalities. Moreover, human rights include cultural rights: the 'violation or abuse of the right of everyone to take part in cultural life, including the ability to access and enjoy cultural heritage, may threaten stability, social cohesion and cultural identity, and constitutes an aggravating factor in conflict and a major obstacle to dialogue, peace and reconciliation' (United Nations Human Rights Council 2018).

17 GCRF and Newton projects have aimed to reduce inequalities and build more inclusive, just, peaceful, and democratic societies, particularly in conflicted-affected environments (ref. 5, 14, 18, 32, 43, 44, 59, 80 and Case Study 11). In this way, they have addressed SDG 10 (target 10.2,[51] 10.3[52] and 10.6[53]) and SDG 16 (target 16.7[54] and 16.b[55]). Research projects have promoted human rights through minority inclusion (ref. 42, 50,

51 Target 10.2: By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

52 Target 10.3: Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.

53 Target 10.6: Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.

54 Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels.

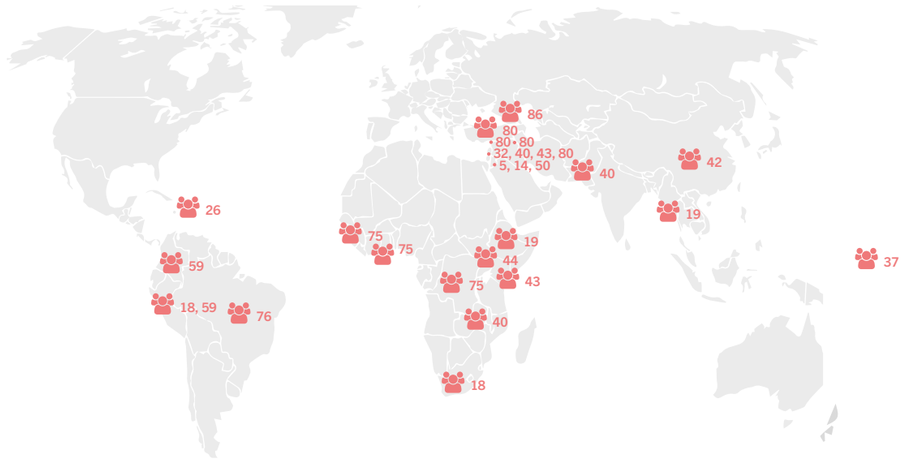
55 Target 16.b: Promote and enforce non-discriminatory laws and policies for sustainable development.

76), particularly of women and girls (see gender equality), Indigenous People (ref. 26, 37, Focus 9), young people (ref. 50, 86), displaced and diasporic communities (ref. 14, 26, 86), and ethnic minorities (see Focus 18). They have shown how heritage and the shared values associated with it can be mobilised as an important element of connection between different communities and minority groups, contributing transformative change through critical dialogue (see Case Study 3).

"As commemoration tends to reflect on the present, rather than the past, it is essential that post-conflict memory work includes women and other marginalised groups to forge more equal and inclusive futures". *Dr. Jelke Boesten, King's College London (ref. 18)*

However, they have also highlighted how heritage is a complex and contested concept which is shaped by, and reflects, international, national, and local power structures. In this way, it is often abused for political purposes and results in perpetuating gender and other inequalities (UNESCO 2014, 34). Different communities, groups, and individuals can attribute different values to heritage and have a distinctive sense of recognition of diversity. In this context, 'cultural rights must be understood as also relating to who in the community holds the power to define its collective identity' and 'it is imperative to ensure that all voices within a community, representing the interests, desires and perspectives of diverse groups, are heard without discrimination' (UNESCO 2014, 5). Projects have questioned the connection between memory and the persistence or transformation of identity (reflected also in archives), which are particularly significant in contexts of post-conflict, displacement, and reconstruction where the multiple lives and narratives of fragile people (e.g. colonised, incarcerated, travelling and forcibly encamped people) can be engendered or silenced, remembered or forgotten (ref. 43).

Infographic 13. Map with Worldwide Distribution of Projects Related to Human Rights, Inequality Reduction, and Minorities' Inclusion (17 projects)



Ref.	Project Title	Country(ies)
5	Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe Project	Jordan
14	Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan	Jordan
18	Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies	South Africa, Peru
19	Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People	Ethiopia, Myanmar
26	Dominica as a Centre of Excellence for the Preservation & Celebration of the Creole Culture through Language, the Arts and its Indigenous Kalinagos	Dominica
32	Following the Wires: Sensing Socio-Material Practices of Everyday Electricity Supply in Post-conflict Greater Beirut	Lebanon
37	Heritage Matters: Culture and Development in the Pacific	Kiribati
40	Humanities for Resilience	Zambia, Pakistan, Lebanon
42	Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China	China

Ref.	Project Title	Country(ies)
43	Imagining Futures through Un/Archived Pasts – Development Proposal	Tanzania, Lebanon
44	Indicators for Informal Learning: a Mobile Heritage Network for Conflict-affected Communities in Uganda	Uganda
50	Learning from Multicultural Amman: Engaging Jordan's Youth	Jordan
59	PEACE FESTIVAL: Sharing Creative Methodologies for Unearthing Hidden War Stories for Peace	Peru, Colombia
75	The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa	Ghana, Sierra Leone, the Democratic Republic of Congo
76	The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development	Brazil
80	The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours	Iraq, Syria, Lebanon, Turkey
86	Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia	Georgia

Focus 18. Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China (ref. 42)

This is project researches a previously unseen and recently digitised photographic archive of two ethnic minorities in northeast China: the Ethel John Lindgren Collection of Evenki and Orochen communities at the Museum of Anthropology and Archaeology, University of Cambridge. This unique archive of 8,000 photographs was collected by Cambridge anthropologist, Ethel John Lindgren, and her Norwegian husband and photographer, Oscar Mamen, who undertook field research between 1919-1921 in what was then northeast Manchuria. They amassed an invaluable visual record of the people, places, and inter-ethnic relations of the region during a formative period in pre-communist China history before they were sedentarised and classified as 'ethnic minorities' by the Chinese state. More importantly, however, the photographs are also a highly personal community-record for Evenki and Orochen people living in China today, who are the direct descendants of those depicted in the photographs, and in many cases the images represent the only visual documentation of their grandparents and kin relations.

(…) The initial findings of the research are being taken up by local communities and state actors. First by local communities using the photographs to reconstruct kinship lineages and develop their own ethno-histories of respective Orochen clans. (…) Second, by local government to use the photographs to develop a website for presenting the history and culture of Orochen communities, as well as in language training at local schools. A cultural and electronic music festival is planned in the Orochen Autonomous Banner in northeast China. The festival is inspired by the history and culture of the Orochen ethnic minority, a community of 8,000 former hunter-gatherers living in the beautiful and pristine Da Xinganliang mountains of the Inner Mongolia Autonomous Region. The aim of the festival is to support the preservation and revitalisation of Orochen culture, by combining indigenous music, craftwork, and lifestyles with contemporary electronic music. Our vision is to bridge the gap between the modern and the traditional by supporting the community in finding new avenues for cultural revitalisation and expression. The festival has the full backing of both the Orochen government and local community, as part of their efforts at maintaining and promoting cultural heritage within the ethnic tourism industry.

Source: Project Abstract, Findings and Impacts on UKRI Gateway to Research

The projects have also promoted art, creativity, emotional, and physical engagement through festivals, film-making, and other creative expressions, to create a space for dialogue across actors and countries. Doing so has amplified the voices of marginalised people, valorised alternative ways to tell hidden and/or uncomfortable histories, and therefore promoted social change (ref. 59, 75). Moreover, they have explored how these engagement and artistic activities can counter official narratives and unsettle ongoing legacies of colonialism, persisting inequalities, and marginalisation, and thereby actively contribute to symbolic reparation and peacebuilding (see Focus 20). Symposia, focus groups, public engagement workshops and other engagement activities have also increased awareness of these topics and promoted inclusive participation, and stimulated negotiations about the past, local activism, public engagement, and resilience (ref. 40). Moreover, projects have emphasised the important role that museums play not only for heritage protection and dissemination, but also to celebrate the multicultural heritage of

diverse communities and to foster a broader human development supporting inclusive, equitable, and quality education, capacity strengthening, community engagement, partnerships, and social cohesion (ref. 37, 50, 80 and Case Study 11). Projects have emphasised the positive role of education, cultural dialogue, and international and multisectoral collaborations in the prevention and reduction of conflicts, violence, and displacement and in promoting peace, justice, and humanitarian action. Finally, one project has also contributed to deepening democracy and promoting more inclusive institutions in politically fragile countries such as Ethiopia and Myanmar, challenging existing power relations and hierarchies, that also exist within academia (see Focus 19).

Focus 19. Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People (ref. 19)

Since 2017 the Global Research Network on Parliaments and People has awarded over £800,000 in grants to scholars, artists and activists in Myanmar, Ethiopia, Bangladesh and the UK. Applications are encouraged from those who don't normally get grants: women, early career researchers, those outside the capital, and those who identify as an ethnic minority. All grants are won on merit through a highly competitive process. 42/46 of the Principal Investigators are from the Global South and the ratio of women to men is 50:50. This scheme contributes to three research agendas: creating opportunities for researchers who tend to get side-lined, deepening democracy through multidisciplinary arts and scholarship, and helping make research more inclusive. The results demonstrate that when research is designed by scholars and artists themselves, people can produce results of astounding value.

In their innovative and multi-disciplinary projects, grantees inquire into the relationship between parliaments, politicians, and people. By combining the social sciences, arts and humanities they reveal new perspectives, amplifying the impacts of research findings in ways that are imaginative, creative, and inclusive. Unsurprisingly, grantees' findings reveal an incredible diversity of both analysis and aspiration about democracy across Myanmar and Ethiopia. People's experience as politicians, activists, or citizens is profoundly affected by gender, ethnicity, age, class, and proximity to urban centres

and resources. Our grantees' outputs so far range from books to films, podcasts, policy briefings, and festivals, all available on our dedicated library.

Reflections on managing international research coalitions:

1. Supportive grant-making: each grant is accompanied by tailored mentoring, training and negotiation. SOAS and partners discuss what is needed with each grantee research organisation (RO). In addition to the individual tailored support, approaches feature facilitating group learning and discussion, running writing workshops, festivals to share learning and encouraging scholars to establish their own networks. A guiding principle is to think long-term, always posing the question: how can the research engage in the most supportive way so that all those involved can develop skills, knowledge, and capacity? In both countries partners and grantees have worked collectively to continue these processes of capacity development, learning, and advocacy.

2. Methods in research and management: research has been identified is a vital part of managing partnerships, just as ethical and efficient management is an important aspect of research coalitions. As part of this the team has pioneered a form a 'collaborative ethnography' to monitor, evaluate and learn from the programme in a way that takes account of plural and diverse views. Treating this as a complex research project in itself, this has involved debating between perspectives on the value of the programme within the team and with all stakeholders. These insights inform the management and preparation of findings for publications. This requires navigating profound differences (including languages) and inequalities with flexibility. Methods in both research and management have demanded improvised practical judgement (as the philosopher John Dewey called it) in the causes of ethics and efficiency. Anthropology has been a good training ground for the team managing this programme with its focus on contextuality, relationships, and communication.

3. Democratic partnership: this also involves inquiring into democratic processes within our programme, raising questions about the most effective ways to challenge global, national, and local hierarchies in academia. While tempting to make claims about

decolonising international research coalitions, there is a need for caution. Scholars writing about post-colonialism have been asking these questions for decades (notably Edward Said and Valentin-Yves Mudimbe) and more recently relating neo-colonialism to other structural inequalities (e.g., based on gender). The achievements of one SOAS programme can not extend beyond a tiny dent in huge, complex, global inequalities. Nonetheless, the team has produced policy briefing on how UK universities can aspire to be better partners offers both principles and practical recommendations.

Source: Project Findings and Impacts on UKRI Gateway to Research and consultation with Emma Crewe (Principal Investigator)

Figure 19. Kvareli archaeological camp (Eastern Georgia) for internally displaced children. Project: 'Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia' (ref. 86).

"There are enormous disparities of opportunity, wealth, and power. Gender equality remains a key challenge. (…) The achievement of full human potential and of sustainable development is not possible if one half of humanity continues to be denied its full human rights and opportunities. Women and girls must enjoy equal access to quality education, economic resources and political participation as well as equal opportunities with men and boys for employment, leadership and decision-making at all levels". *United Nations 2015, Paras 14, 20*

Gender Equality

Gender is a complex concept, including not only the binary division between men and women, but also queer, transgender, and nongender identities. Gender is also a 'cultural and social construction, defined by the power relations between men and women, and the norms and values regarding 'masculine' and 'feminine' roles and behaviour' (UNESCO 2014, 14). Today, gender inequalities and discrimination persist around the globe, deeply rooted in societies and intersecting with class, race, poverty level, ethnicity, religion, age, disability, and marital status. Even as women and girls represent half of the global population, discriminatory laws and social norms remain pervasive and women and girls are underrepresented at all levels in political leadership, in high-level professional roles and in economic decision-making processes. They often suffer from an unfair access to decent work, face occupational segregation, receive lower salaries, and deal with a disproportionate share of unpaid domestic work. In many contexts, they are also denied accessing to basic education, health care, and proper nutrition, and are victims of physical and sexual abuse, violence, and discrimination.

Ten GCRF and Newton projects have tackled the challenge of gender equality, a key perspective for societies' transformation, and so have also addressed SDG 5 (target 5.1,[56] 5.2,[57] 5.5,[58] 5.b[59] and 5.c[60]) and SDG 10 (target 10.2[61]). These projects have tackled the challenge of gender equality from different perspectives, including human rights, inequality reduction, and minorities' inclusion, transformative justice and democratic

56 Target 5.1: End all forms of discrimination against all women and girls everywhere.

57 Target 5.2: Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.

58 Target 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

59 Target 5.b: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

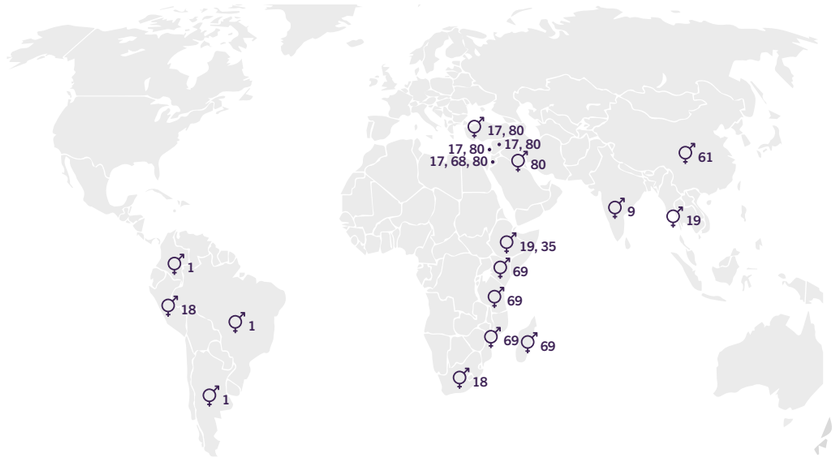
60 Target 5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.

61 Target 10.2: By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

processes in post-conflict and fragile contexts (ref. 17, 19, 80 and Focus 20). They have provided evidence for women's centrality to food security and sustainable agriculture in India (ref. 9) and Ethiopia (ref. 35) and to poverty alleviation and sustainable socio-economic development in Jordan (ref. 68), East-Africa (ref. 69) and China (see Case Study 8). In addition, one project has examined the role of sport (football) (see Case Study 1): on one hand, sport is very often a domain of women's and girls' exclusion, invisibility and symbolic violence; on the other hand, it may be an important enabler to sustainable development through the promotion of tolerance and respect and may in some circumstances contribute to the empowerment of women within communities (United Nations 2015, Para. 37). Nevertheless, all these projects applied a heteronormative view to gender and considered a binary division between men and women, therefore excluding transgender and non-gender identities in their analysis and activities. The same approach is reflected in the definition of the above-mentioned SDGs by the UN 2030 Agenda.

Figure 20. Museo de la memoria in Putacca, Ayacucho, Peru. Project: 'Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies' (ref. 18). Photograph by Jelke Boesten 2018.

Infographic 14. Map with Worldwide Distribution of Projects Related to Gender Equality (10 projects)



Ref.	Project Title	Country(ies)
1	A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America	Brazil, Argentina, Colombia
9	Changing Farming Lives in South India, Past and Present	India
17	Cultures of Expertise: Academics in Exile and their Role in the Future Food Security Agenda for Syria (SyrianFoodFutures)	Syria, Turkey, Jordan, Lebanon
18	Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies	South Africa, Peru
19	Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People	Ethiopia, Myanmar
35	Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia	Ethiopia
61	Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera	China
68	Rewriting the Prehistory of Jordan	Jordan
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
80	The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours	Iraq, Syria, Lebanon, Turkey

GCRF and Newton research projects have provided an alternative discourse of women's and girls' role in development, demonstrating their everyday contributions to sustainable development practices through their knowledge, skills, cultural traditions, and experience in maintaining food security and agricultural diversity, and through their fostering of economic development and in promoting communities' welfare, particularly in rural contexts. The projects have investigated reasons for women's exclusion and the obstacles to their inclusion. In addition, they have interrogated constructions and performances of masculinities in predominantly male sectors (e.g. football and politics) and in post-conflict societies. This work can build counter-narratives for gender justice and inclusion. Projects have also actively addressed gender equality and women's empowerment by giving them a voice and an active role in projects' implementation, boosting their creativity and self-confidence, co-producing female-focused education materials and training activities, and raising awareness of the cultural and economic relevance of women's work through exhibitions and events for families and local schools.

Figure 21. Mural on the stadium in Huanta, Ayacucho, Peru. Project: 'Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies' (ref. 18). Photograph by Jelke Boesten 2018.

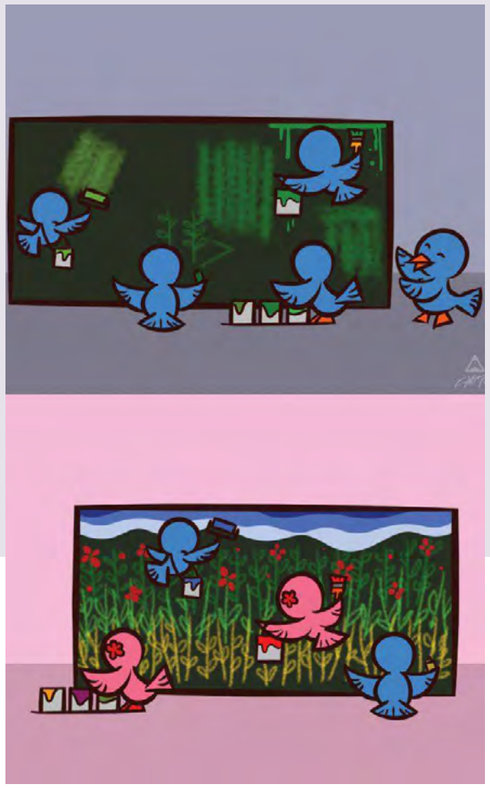


Figure 22. 'The inclusion of women's voices in Parliament create fuller and more diverse perspectives and conversations that can improve political decision-making': cartoon produced as part of a project led by the Myanmar NGO 'Jeepyah Civil Society Development Organisation'. Project: 'Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People (ref. 19)'. Cartoon by Min Arkar Htet (with permission).

Focus 20. Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice (ref. 18)

This project aims to unpack the way in which memorial arts in transitional societies contribute to gender justice or not. Sixty scholars, activists, curators, and artists came together in three different conferences in London, Lima, and Cape Town over a period of two years to debate and critique different forms of memorialisation. The project team are interested in a) symbolic reparation, i.e., does memorialisation do something for victim-survivors in terms of repair and justice, and b) gender justice, i.e., does memorialisation unsettle unequal and harmful gender relations for the future?

Participants, of which forty (including lawyers, curators, artists, and activists) are from transitional societies, looked at 20 different countries. These events have served as international networking events creating important exchange of ideas across continents that normally have little intellectual contact (e.g. Andean Latin America and Southern Africa). This is essential in co-producing knowledge and establishing South-South learning. The events included professionally organised memorial tours across Cape Town and Lima, visual arts, performance, and scholarly presentations. The outputs of this are in-print in two edited volumes, one co-edited by Boesten (King's College London) and Helen Scanlon (University of Cape Town), which includes fourteen case studies and is under contract with Routledge Transitional Justice Series, and another volume edited by Alexandra Hibbett and Julissa Mantilla (Catholic University of Peru) provisionally entitled: Reparar La Violencia de Género: Arte y justicia para mujeres en Perú y Colombia.

Source: Response to PRAXIS Survey on Heritage for Global Challenges by Jelke Boesten (Principal Investigator)

"Our research into how textual and visual discourses around football have been constructed in Latin America over the last century has revealed the key role of heritage in creating—and now in challenging—gender inequality". *Prof. David Wood, University of Sheffield (ref. 1)*

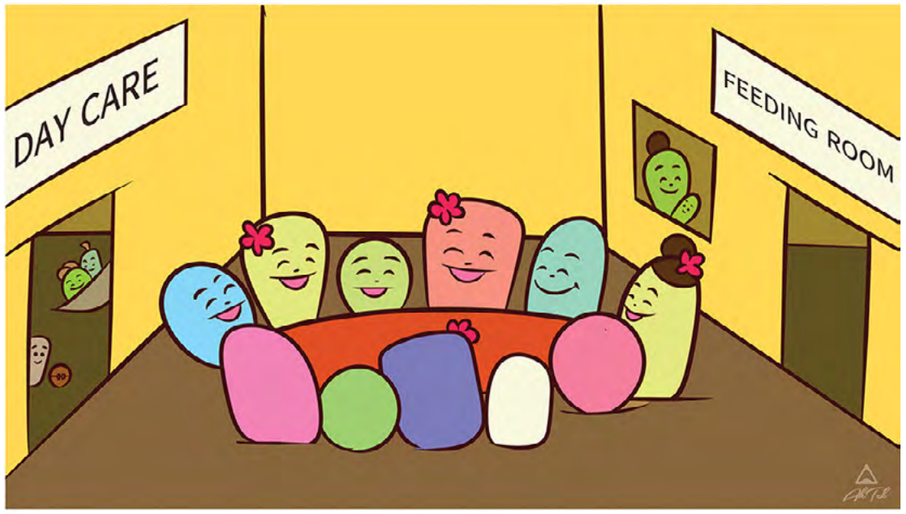


Figure 23. 'Parliaments in Myanmar lack daycare and nursing rooms for women members of Parliament with children, making it difficult for them to become or advance as political representatives and leaders': cartoon produced as part of a project led by the Myanmar NGO 'Jeepyah Civil Society Development Organisation'. Project: 'Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People' (ref. 19). Cartoon by Min Arkar Htet (with permission).

"We commit to providing inclusive and equitable quality education at all levels—early childhood, primary, secondary, tertiary, technical, and vocational training. All people, irrespective of sex, age, race or ethnicity, and persons with disabilities, migrants, indigenous peoples, children, and youth, especially those in vulnerable situations, should have access to life-long learning opportunities that help them to acquire the knowledge and skills needed to exploit opportunities and to participate fully in society. We will strive to provide children and youth with a nurturing environment for the full realization of their rights and capabilities, helping our countries to reap the demographic dividend, including through safe schools and cohesive communities and families". *United Nations 2015, Par. 25*

Inclusive, Equitable, and Quality Education

Inclusive, equitable, and quality education at all levels is not only essential for sustainable development but is also a development goal in itself (SDG 4). 13 GCRF and Newton projects have shown how heritage and heritage research plays a central role in addressing target 4.7[62] but also 4.3[63], 4.5,[64] 4.b[65] and 4c[66]. These projects have harnessed the potential of multicultural heritage to provide different approaches to inclusive and quality education, from formal schooling to community learning, training, and other activities to strengthen local capacities. They have targeted the younger generation and minorities in particular, but also teachers, museum staff, researchers, and other stakeholders. The projects involved partnerships with local museums, schools, universities, and cultural institutions, sometimes in dialogue with ministerial departments. As such, these projects have been able to connect international experience to local educational needs in different geographical areas, making a valuable contribution on the ground. In some cases, they have also provided a positive response to the impacts of COVID-19 on the digital divide affecting for example the ability of non-metropolitan schools in the Sechura desert in

62 Target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

63 Target 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.

64 Target 4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

65 Target 4.b: By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.

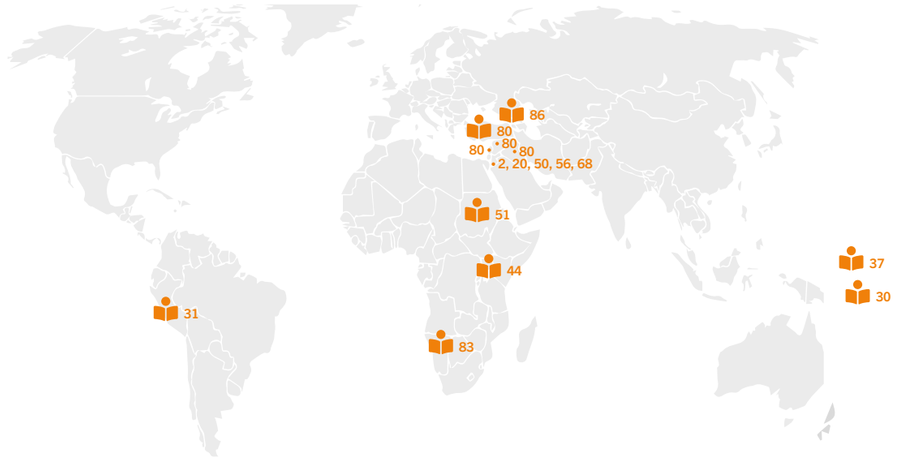
66 Target 4.: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.

Peru to engage with online education (ref. 31)[67]. Overall, co-production and partnership were essential to producing effective and meaningful impacts.

The richness of local knowledge, languages, heritage sites, and museums' collections has provided a laboratory to develop cultural heritage narratives and actively engage students, teachers, and other participants in innovative, experiential, hands-on, and emotional learning activities. At the same time, bringing local (and socially excluded) communities into museums, heritage sites, and exhibitions has increased participants' awareness of heritage values—this is the first step for the long-term safeguarding of heritage over time. Projects have engaged marginalised groups (e.g. people from remote areas and Indigenous Peoples), stimulating cohesion and inclusion. In doing so, they have been keenly aware of differences in socio-cultural contexts and have identified professional and social barriers to innovative approaches that might address local needs and work for both teachers and learners. Learning through active engagement inspires participants and creates a positive experience that can be shared with friends and families and replicated with or by them. This increases the projects' impacts by reaching a more beneficiaries (see Case Study 11).

67 In March 2020, lockdown and the suspension of classes left the 154 schools and 21,059 students, from the Unidad de Gestión Educativa (UGEL: Sechura School Board), abandoned with no educational support. In response, the project "Fishing and Farming in the Desert? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change in Sechura, Peru" provided computer tablets and data packages for the Instituto Educacional Daniel Alcides Carrión (IE DAC)'s school director, social studies teacher and 10 students (just under 10% of the secondary enrolment) and delivered a six-session, on-line curriculum around environmental storytelling. In December 2020 it was recognised nationally in the annual Education Innovation awards sponsored by Peru's Education Development Fund of Peru (FONDEP). In September the IE DAC staff won first prize at the Sechura School Board's Regional Annual Education and Innovation Competition for their presentation 'RECUST '(Recopilar, crear y utilizar storytelling' [collect, create and use storytelling']) based on this work. For the first time in Sechura, online training in the use of computer tablets for research, developed digital and on-line literacy and enhanced the students' understanding and appreciation of their local area and its climate-related livelihoods' history as part of a social studies curriculum. A follow-on funding application is currently under consideration to scale this experience up more widely in Peru.

Infographic 15. Map with Worldwide Distribution of Projects Related to Inclusive, Equitable, and Quality Education (13 projects)



Ref.	Project Title	Country(ies)
2	A Multi-Isotope Base Map for Jordan: a Tool for Re-examining Movement and Community in the Past	Jordan
20	Dhiban: Valuing Sites Through Valuable Stories	Jordan
30	Fiji's Artistic Heritage: Impact and Engagement in Fiji	Fiji
31	Fishing and farming in the desert'? A platform for understanding El Niño food system opportunities in the context climate change in Sechura, Peru	Peru
37	Heritage Matters: Culture and Development in the Pacific	Kiribati
44	Indicators for Informal Learning: a Mobile Heritage Network for Conflict-affected Communities in Uganda	Uganda
50	Learning from Multicultural Amman: Engaging Jordan's Youth	Jordan
51	Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices, and Endangered Cultural Heritage	Sudan
56	Our Past, Our Future, All Together in Faynan (OPOF)	Jordan
68	Rewriting the Prehistory of Jordan	Jordan
80	The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours	Iraq, Syria, Lebanon, Turkey
83	Transnationalizing Modern Languages: Global Challenges	Namibia
86	Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia	Georgia

Figure 24. Training graduate students from Yarmouk University in scientific archaeology techniques to study prehistory at the newly established research centre in Wadi Faynan, southern Jordan. Building up projects towards their writing a new Prehistory of Jordan. Project: 'Rewriting the Prehistory of Jordan' (ref. 68).

"Young people throughout Jordan, who have become increasingly disengaged from their rich and diverse cultural heritage, will benefit from the good professional practices in museum education that we have enhanced as part of our project". *Prof. Robin Skeates, Durham University (ref. 50)*

Focus 21. Transnationalizing Modern Languages: Global Challenges (ref. 83)

The project addresses the role of multilingualism and translation in professional education in a specific ODA country, Namibia, characterized by a highly complex linguistic landscape. The project's findings stress the impact of individual and collective attitudes to—as well as policies about—languages and multilingualism. This covers equal access to education, services (including media and the arts, legal services, and others) and personal development (including professional growth and career development); social cohesion (including social justice); and individual and collective wellbeing (including health and economic growth). The project is based on collaboration and co-production with the University of Namibia (UNAM). In Namibia, the project has benefits teachers, academics, students and early career professionals in the health sector, students of media and law, policymakers (regional language advisors and members of NIED – National Institute for Educational Development), and schools (Van Rhyn primary school in Windhoek and its associated network of regional schools). Plans are being developed to extend the project's approach and findings to other African countries in collaboration with 'The Phoenix Project', a large public engagement project led by Cardiff University. Moreover, collaboration is ongoing with UNAM and links have been established with the University of Zambia (UNZA) via subsequent Erasmus+ and Commonwealth Fellowship awards. At UNAM, current projects include the translation into indigenous languages of resources supporting the mental wellbeing of young children during the COVID-19 pandemic. In the case of UNZA, activities have concentrated in the areas of interpreter and translator training, sensitization of health professionals, and public health communication.

The project emphasises co-production and co-research. The collaboration at the heart of the project has implications for UK practices and is having an impact in the UK. Examples include a collaboration with the Watch Africa Film Festival in Cardiff, with the Modern Languages Mentoring project (funded by the Welsh Government), with schools and educational advisers in Scotland and Wales and with the Learned Society of Wales (e.g. participation at 'Black Lives Matter Series: Language, Inclusivity and the Stories We Tell'). The role of the project in thinking about multilingualism and translation in the UK and Namibia is an important part of the Policy Report: 'Reframing language education for a global future'—launched at the British Academy on 9 November 2018. The project is committed to developing sustainable and creative understandings of everyday multilingual practices in both Namibia and the UK. Specific impacts include:

- The introduction of tailored training on multilingualism and translation in the academic and professional development programmes of UNAM's Medical School (in areas such as Pharmacy, Family Medicine, Nursing, and the new MMED in Anaesthesia);

- The co-development of a version of the MOOC 'Working with Translation', co-taught by Cardiff University and UNAM staff from March–April 2018. This free online course aims, among other things, to respond to the needs of learners from the African continent (usually characterised by low uptake of such programmes). In September 2020 this course was included in 'Class Central's 'Top-200 of all time'.
- The development of a fellowship and training programme (held in Cardiff, in collaboration with the Watch Africa charity and film festival) for Namibian students of Media Studies. The programme aimed to sensitise the students to the role of the creative industries in supporting multilingual practices in Namibia, especially among the younger generation, who are increasingly drawn to an English-dominated popular culture.

Source: Project Findings and Impacts on UKRI Gateway to Research and consultation with Charles Burdett (PI) and Loredana Polezzi (Co-I)

GCRF and Newton projects have also provided high-quality training to teachers, university lecturers, museum staff, and artists. They have helped to improve museum practices, displays, facilities, and educational programmes, and to connect cultural heritage with the sustainable use of local resources (ref. 30, 37, 50, 86 and Focus 22). The project Learning from Multicultural Amman: Engaging Jordan's Youth was particularly successful in this regard (ref. 50). The evaluation of a 4-day training programme provided to Jordanian museum staff in July 2019, for example, demonstrated that the trainees gained knowledge and skills on communication and interpretation in museums as well as in engaging visitors and communities. The evaluation also highlighted the benefits of an informal collaborative network of museum staff across Jordanian museums. The trainees subsequently implemented small changes in their museums, such as changing display labels, using exploratory learning and teaching approaches, and providing educational activities to children among others. This generated meaningful impacts on the museums' cultural and educational offer. The research findings are now being transformed into guidelines to inform Jordanian decision-makers on good practice in museums and education.

Focus 22. Our Past, Our Future, All Together in Faynan – OPOF (ref. 56)

Faynan is located south of the Dead Sea on the eastern side of Wadi Araba in southern Jordan. This is an economically deprived area, with pastoralism and irrigation-based farming providing livelihood to members of four Bedouin tribes who live within Faynan: the 'Ammarin, Sa'idiyyin, Rashaydah and 'Azazmah. It has a remarkable archaeological landscape, explored by research teams from the UK, US, and Germany over the last forty years, all with support from the Jordanian Department of Antiquities. While there have been many academic publications, this cultural heritage has not been sufficiently used to support eco-tourism into Faynan which could be a major source of income for sustainable economic growth. Neither has the cultural heritage been made accessible to the local community and used to support social cohesiveness, education, and well-being. The establishment of the Faynan Museum by the Department of Antiquities and the Ministry of Tourism and Antiquities provides an opportunity to make progress on both of these matters. An AHRC funded project (Discovering WF16, ref. 25) established the first displays and a 3D figure for the most important archaeological sites within the museum, and provided a small number of information boards at the archaeological sites.

Building on the previous research findings and achievements, OPOF develops museum facilities, new displays, and a new heritage trail to make one of the most impressive and important archaeological sites of the region accessible to tourists and schools. Project activities are jointly developed with the people of Faynan, who are provided with a means to represent their own history in their own way, i.e. a museum. Co-creation is supported through workshops with women, men, students, and children in every sub-project of OPOF. The project uses every opportunity available to support community needs with minimal use of budget, for example collaborating with a Jordanian NGO to raise an awareness campaign around the importance of information boards with cooperatives surrounding Wadi Faynan; and a training for three community members on how to erect them. The project is also supporting cultural heritage education in six local schools, for both students and teachers. Schools surrounding Wadi Faynan are supported through the production of a participatory educational kit focused on Faynan Heritage which includes activities at the Faynan museum and delivers training around 'Teaching Children

about Faynan Heritage'. The objective is to develop an awareness and understanding of Faynan's cultural heritage, provide educational resources, and contribute to providing quality education among Faynan's community, as a means to support sustainable economic development.

All these activities contribute to increasing a local sense of ownership, an essential requirement for long-term project sustainability. Moreover, the research team has secured additional funding for continuing their support: the Archaeology into Business in Faynan (ABIF)[i] is a AHRC-GCRF follow-on scheme, which responds to a specific request by the local community for a project to support their economic development, by developing a small business—owned and run by Bedouin women—to produce high quality, locally inspired handicrafts for sale to tourists. Similarly, the project The Past Empowers the Present (PEP)[ii] was awarded as a direct consequence of OPOF winning the Newton Prize for Jordan and has provided further funding to expand the activities and facilities of the Faynan Heritage Women's Association.

Source: Project Abstract and Findings on UKRI Gateway to Research, Response to PRAXIS Survey on Heritage for Global Challenges by Nebras Maslamani (OPOF project manager) and consultation with Steven Mithen (PI) and Derek Duncan (Co-I)

[i] ABIF (PI: Steven Mithen; Co-Is: Obyda Hummash and Carol Palmer) is an AHRC funded project (£86,122) carried out by the University of Reading in collaboration with Future Pioneers for Empowering Communities (Jordan), Council for British Research in Levant (Jordan) in Jordan between February 2020 and July 2021.

[ii] PEP (PI: Steven Mithen; Co-Is: Obyda Hummash and Fatima Al Nammari) is a Newton funded project (£198,6,612) that will be carried out by the University of Reading in collaboration with Future Pioneers for Empowering Communities (Jordan) and the University of Petra (Jordan) in Jordan between April 2021 and March 2022.

GCRF and Newton research projects have also demonstrated how the fundamental role of education in addressing other development challenges. They have shown, for example, that education is vital for food security and sustainable agriculture (ref. 2, 51). In Sudan, the production and distribution of a community-orientated book on 'Nubia past and present, agriculture crops and food' to small-scale farming communities and local schools was used to strengthen local capacities in traditional agricultural knowledge to create strategies for agricultural resilience (see Case Study 7). A project in Namibia (see Focus 21) has demonstrated the centrality of multi-lingual education to address global health and well-being and to foster sustainable development. Working with the University of Namibia, the project promoted multilingual education in schools, adult education, and health systems to improve social well-being and economic development. The provision of training and capacity building for museums and local communities has also contributed to poverty alleviation and sustainable socio-economic development, particularly through tourism (ref. 20, 68 and Focus 22). Finally, the provision of formal and informal education and capacity development through heritage has proven to be a fundamental resource for peace and reconciliation in conflict-affected societies (ref. 44, 80). In projects focussed on Uganda and the Middle East, memory and other heritage sites have been shown to engage people affected by conflict, violence, trauma and displacement and are invaluable spaces for learning about peace and reconciliation, prevention of conflict, and post-conflict development. In this way, such sites contribute to communities' and places' economic, cultural and social development.

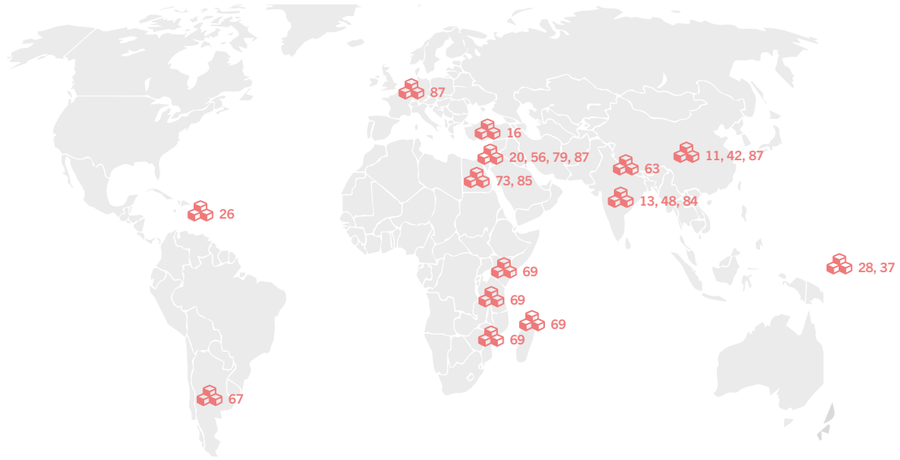
Figure 25. Kvareli archaeological camp (Eastern Georgia) for internally displaced children. Project: 'Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia (ref. 86)'. Photograph by Nino (Nicki) Bakanidze.

"As various aspects of development threaten to degrade and destroy heritage and its inherent values, it is necessary to take up the challenge of conserving this fragile, crucial and non-renewable resource for the benefit of current and future generations. It is now widely agreed that heritage—with its value for identity, and as a repository of historical, cultural and social memory, preserved through its authenticity, integrity and 'sense of place'—forms a crucial aspect of the development process. The challenge of integrating heritage and ensuring that it has a role in the context of sustainable development is to demonstrate that heritage plays a part in social cohesion, well-being, creativity, and economic appeal, and is a factor in promoting understanding between communities". *ICOMOS 2011*

Balancing Heritage Conservation and Development

Heritage and development are two interconnected concepts, sometimes considered as two sides of the same coin (Bandarin, Hosagrahar, and Sailer Albernaz 2011, 23). As discussed throughout this chapter, heritage is a strong ally in fostering sustainable development and an essential component of human development. However, the consequences that (unsustainable) development can generate on its long-term safeguarding, management and transmission to future generations can be devastating and irreversible. Finding a balance between the need for heritage conservation with those of development is becoming every day a more urgent and challenging task, opening up new areas of heritage research (see The Way Forward). Significant development projects are able to attract large investments and to generate new economic activities. However, the unintended consequences that new economic developments, infrastructures, agricultural intensifications, speculative land acquisitions and other adversely impacting factors may have on local heritage, places and their communities can be destructive. At the same time, there is also a need to reflect on the unintended consequences of heritage for development. Processes such as the World Heritage status recognition, the promotion of massive tourist development strategies, or the establishment of protection boundaries or the restoration and renovation of historic buildings, can change and seriously compromise local social, cultural, economic and environmental dynamics and produce negative impacts on heritage, places, people, and their environment (e.g. gentrification processes, forced relocation, pollution and water shortage, poor waste management, loss of heritage integrity and authenticity, etc.).

Infographic 16. Map with Worldwide Distribution of Projects Related to Balancing Heritage Conservation and Development (18 projects)



Ref.	Project Title	Country(ies)
11	China Ports: History, Heritage and Development	China
13	Community-led Heritage Regeneration in India	India
16	Cultural Heritage in Landscape: Planning for Development in Turkey	Turkey
20	Dhiban: Valuing Sites Through Valuable Stories	Jordan
26	Dominica as a Centre of Excellence for the Preservation & Celebration of the Creole Culture through Language, the Arts and its Indigenous Kalinagos	Dominica
28	Enduring Connections	Kiribati
37	Heritage Matters: Culture and Development in the Pacific	Kiribati
42	Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China	China
48	IT INDIAN HERITAGE PLATFORM: Enhancing Cultural Resilience in India by Applying Digital Technologies to the Indian Tangible and Intangible Heritage	India
56	Our Past, Our Future, All Together in Faynan (OPOF)	Jordan
63	Promoting the Protection of Heritage Sites in Nepal's Western Terai in the Face of Accelerated Development	Nepal
67	Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia	Argentina

Figure 26. Historic village of Shutb, in the Asyut Region (Egypt). Project: Sustainable Solutions towards Heritage Preservation in the Asyut Regio, Middle Egypt (ref. 73). Photograph by Matjaz Kacicnik, with courtesy of the Trustees of the British Museum.

Ref.	Project Title	Country(ies)
69	Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits	Kenya, Tanzania, Mozambique, Madagascar
73	Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)	Egypt
79	The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village	Jordan
84	Urban Heritage and the Digital Humanities in India	India
85	Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo	Egypt
87	World Heritage FOR Sustainable Development	China, Jordan, Belgium

"Heritage (tangible and intangible) embodies the rich history and contemporary life of the local community. In the fast process of digitalisation and globalisation, heritage gives us a distinctive identity as well as a unified voice in tackling the essence of global challenges that makes who we are: migration, gender equality, and a green Mother Earth". *Dr. Halii Ma, University of Leeds (ref. 61)*

18 GCRF and Newton research projects have revealed how different kinds of heritage, ranging from archaeological and pilgrimage sites to urban and natural landscapes, coastal, maritime and submerged heritage, intangible knowledge and practices, living heritage and traditions (ref. 26, 37, 42) currently risk disappearing or to be irreversibly damaged by inconsiderate and accelerated (mainly economic) development all over the world. They have contributed to SDG 11 (target 11.4) by supporting the protection, safeguarding and management of both cultural and natural heritage, also through the use of digital and innovative technologies (ref. 16, 48, 63, 67, 79, 84 and 85). At the same time, they have also addressed SDG 6 (target 6.b[68]), SDG 8 (target 8.9[69]) and SDG 9 (target 9.a[70]), promoting a socio-economic development respectful of, and rooted in, local heritage, communities and values (ref. 20, 56). Successful development projects need to take into account communities' and individuals' needs, expectations, and challenges, particularly those of the most disadvantaged and vulnerable people, and to respect and integrate local heritage and values in their design and implementation in a coherent manner. In this context, different interests and priorities between different stakeholders (heritage professionals, site and urban managers, local residents, developers, businesses, tourists, minorities, marginalised groups, etc.) need to be carefully negotiated as they can lead to tensions and conflicts (ref. 87). The research projects have raised important questions about who is actually benefitting from these investments and development projects and concerns about their effective capability to positively impact on local communities. They provided constructive examples on how to better involve local communities in sustainable heritage management and development strategies and how to influence the design and implementation of development projects (ref. 13, Case Study 5, Case Study 9 and Case Study 10). Finally, both development and heritage conservation interventions are often conceived, scoped and implemented independently, resulting in unintended adverse impacts for both sites and communities. The research projects facilitated multidimensional and collaborative processes, crossing boundaries between different disciplines and sectors and building bridges between different typologies of stakeholders, e.g. academics and practitioners, private and public, heritage and development, etc. (Focus 23).

68 Target 6.b: Support and strengthen the participation of local communities in improving water and sanitation management.

69 Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

70 Target 9.a: Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing.

Focus 23. China Ports: History, Heritage, and Development (ref. 11)

This network establishes links between academic network members and those outside of academia, especially in museums, the urban design field, and the heritage sector. Non-academic members take a prominent role at all workshops, for example, and in-depth discussions about how academic researchers might contribute to the work of specialists in other fields or industries are regularly facilitated. In turn, the project helps to directly link practitioners from the private and government sectors in the UK with some of their counterparts in China (one example being the translation and subsequent inclusion in a China Ports Museum journal of a study based on work done by a UK-based member in port development in England). The Network also provides a platform through which new theoretical and conceptual perspectives are brought to bear on the research of network members working in other fields. Historians on the network have provided new perspectives on urban history which are of interest to curators in China, while anthropologists and sociologists on the network have proven how ethnographic fieldwork in port cities can provide types of data which documentary or archaeological work is unable to provide.

Workshop 2 (hosted by the China Ports Museum in Ningbo, China) has generated significant interest in the local media, being reported on in the local press and on television. This has helped to raise the profile of the China Port Museum within China itself. Indeed, the deputy mayor of Beilun District was present at the workshop and expressed interest in the ways in which a network such as this might help the city of Ningbo (one of the largest ports in the world) to expand as a centre of maritime research. In light of Nottingham's overseas campus in Ningbo, we expect such conversations to continue well beyond the period covered by the grant and to be of benefit to Ningbo (and its institutional partners in the UK). In addition, we note that the network has facilitated direct contacts between network members from the marine sector in the UK (e.g. those who work in areas such as port development) with their counterparts in China, thus laying the groundwork for future opportunities for collaboration in this industry between the UK and the People's Republic of China.

Source: Project Abstract, Findings and Impacts on UKRI Gateway to Research

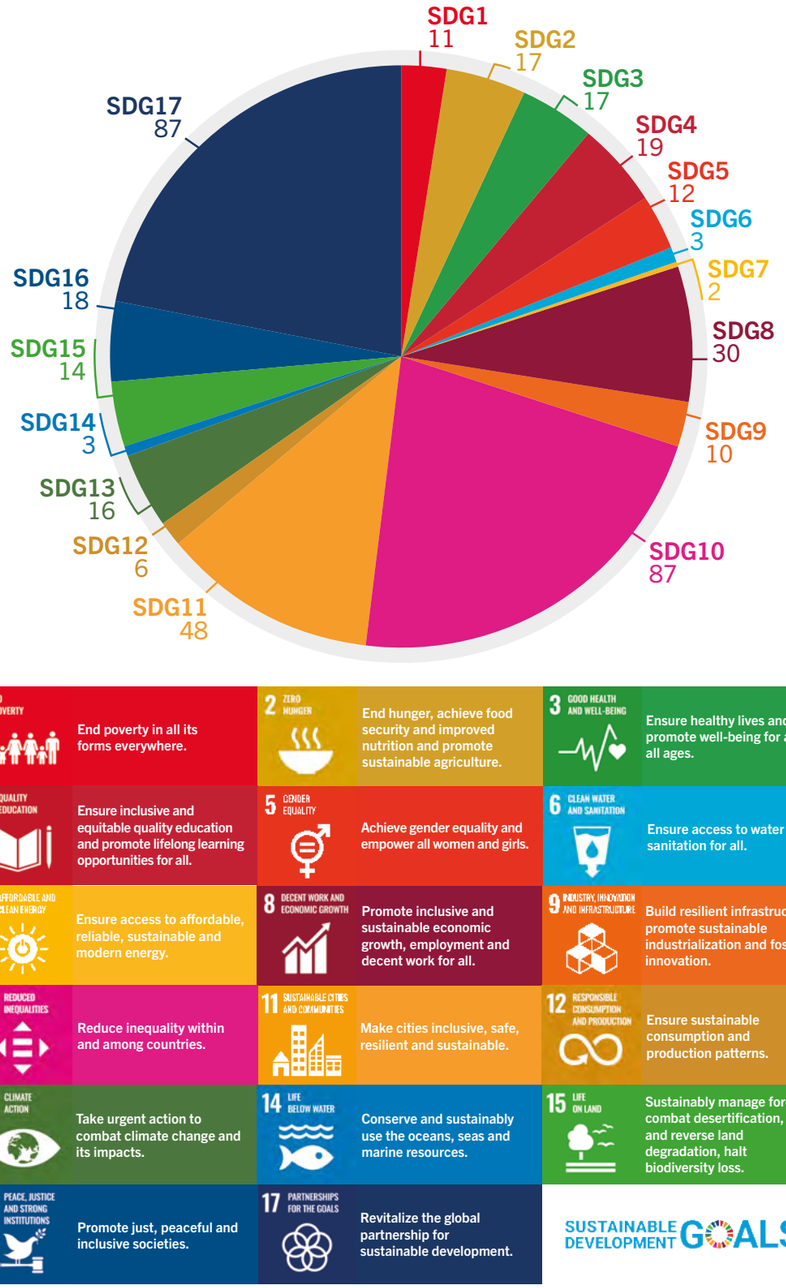
Figure 27. Traditional instrument making, an example of China's intangible cultural heritage, in Zhengzhou. Project: 'Located Making: Unlocking the Potential of Cultural Heritage by Design' (ref. 53). Photograph by Stuart Walker with permission.

Heritage Research, Global Challenges, and the SDGs

This chapter has substantiated how heritage and heritage research can help tackle global challenges and contribute to the UN international development agenda. GCRF and Newton research projects have targeted all 17 SDGs, in particular SDG 10 – Reduced Inequalities and 17 – Partnerships for the Goals (87 projects), SDG 11 –Sustainable Cities and Communities (48 projects) and SDG 8 – Decent Work and Economic Growth (30 projects), but also SDG 4 – Quality Education (19 projects), SDG 16 – Peace, Justice and Strong Institutions (18 projects), SDG 2 – Zero Hunger (17 projects) and SDG 3 – Global Health and Well-being (17 projects). Nevertheless, there are areas where the potential contribution of heritage research remains under-explored, i.e. responsible consumption and production (SDG 12), conservation and management of oceans and marine resources (SDG 14), clean water, sanitation and energy (SDG 6 and 7), and gender equality (SDG 5).

Moreover, while this section has emphasised the interconnection between heritage research for the SDGs, much remains to be done for their practical operationalisation on the ground. There is still limited awareness of the SDGs framework, and of the potential of heritage and heritage research for meeting the SDGs, among both academics and local stakeholders. The UN agenda is of unprecedented scope and significance in its aim to provide a comprehensive, far-reaching and people-centred set of universal and transformative collective goals (United Nations 2015, Par. 2, 5). The conference organised by PRAXIS on Heritage and Global Challenges (West Bek'aa, Lebanon, 24–26th February 2020) and the interviews carried out as part of this study have recognised the strong potential that exists in aligning heritage research projects to the SDGs. The 2030 Agenda constitutes a unique cross-cutting common framework that is broadly accepted and acknowledged, and can open up a dialogue between multi-level (international, national and local) and multi-sectoral actors using the same language and sharing the same goals. Aligning heritage research to the SDGs can secure public support and mobilise financial, technical, and human resources to foster a more sustainable development. This call for

Infographic 17. Number of Projects Addressing Each Sustainable Development Goal (SDG)



action is timelier than ever given the COVID-19 pandemic, which has created an imperative for positive transformation.

The Lebanon PRAXIS conference also highlighted several criticisms about the scale and ambition of the international development agenda set by the United Nations in 2015. The UN agenda risks being a universal framework that is externally imposed, and which elides the complexity of global challenges and the need to respect cultural differences and respond to local needs and expectations. The UN agenda is unavoidably limited in the way the SDGs are framed, defined, and measured. These issues, and many others, need to be taken into consideration, explored and questioned when aligning heritage research to the SDGs. Conducting heritage research within the framework of the SDGs requires interrogating the applicability of this universal framework to the specificities of local contexts. In addition, researchers must identify gaps and challenges as well as ways to better harness the potential of culture and heritage for international (sustainable) development.

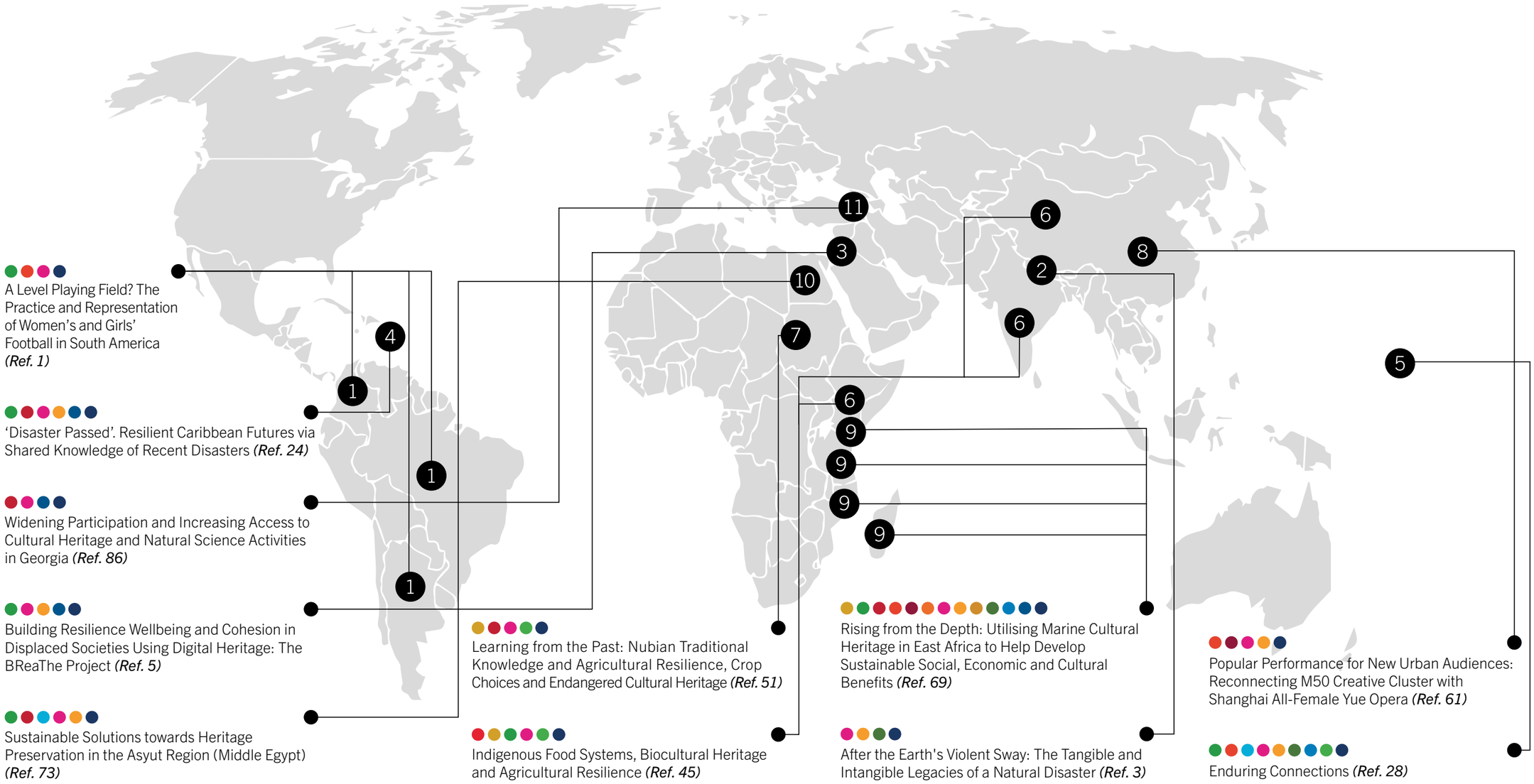
"Our contention is not so much how can heritage inform sustainable development but rather that sustainable development is simply not possible without the knowledge and data-sets that heritage approaches can provide. A consideration of cultural heritage should be an essential part of sustainable development not an optional add-on". *Dr. Jon Henderson, University of Edinburgh (ref. 69)*

Figure 28. Colleagues from the Science Museum in London and the Palace Museum in Beijing gather around the Wells Cathedral clock, one of the oldest surviving clocks in the world. Project: 'Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK' (ref. 82). Photograph by the Science Museum Group.

Chapter 2. Challenge-Led Research Case Studies

In addition to the project spotlights showcased in the previous chapter, this chapter presents eleven case studies to highlight key findings, impacts, and success stories with a cross-cutting approach across different thematic clusters. The case studies represent a range of perspectives including: different geographical regions (North and East Africa, Anatolia, Middle East, South and Central Asia, Latin America, SIDS in the Pacific and the Caribbean); a variety of global challenges and SDGs; different forms of heritage (tangible and intangible); and different types of funding (GCRF, Newton, Network +, Follow-on, etc.) and funding value. The collated case studies demonstrate the capacity of GCRF and Newton research projects to simultaneously address multiple global challenges and SDGs, with an interdisciplinary, cross-sectoral, collaborative, inclusive, and long-term approach. The case studies—together with the practical examples ('Focus') showcased in Chapter 1—also highlight a number of cross-cutting themes of great importance to heritage research for international development. These include: use of A&H methodologies and (co-)production of creative outputs; implementation of interdisciplinary and intersectoral approaches; cultural and place sensitivity; promotion of inclusive, participatory and decolonised research; contribution to capacity strengthening and empowerment; raising awareness of the importance of heritage preservation, management and enhancement; promotion of knowledge exchange, networks, and equitable partnerships; and influence on policy, planning, and decision-making. Successful practices and lessons learnt in relation to these cross-cutting issues are presented in Chapter 3.

Infographic 18. Worldwide Distribution of Case Studies



A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America *(Ref. 1)*

'Disaster Passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters *(Ref. 24)*

Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia *(Ref. 86)*

Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe Project *(Ref. 5)*

Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt) *(Ref. 73)*

Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage *(Ref. 51)*

Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience *(Ref. 45)*

Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits *(Ref. 69)*

After the Earth's Violent Sway: The Tangible and Intangible Legacies of a Natural Disaster *(Ref. 3)*

Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera *(Ref. 61)*

Enduring Connections *(Ref. 28)*

Figure 29. Football. Photograph by Omar Ram on Unsplash.

Case Study 1. A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America (ref. 1)

PI	David Wood
Co-Is	Silvana Vilodre Goellner and Verónica Moreira
Research Organization	University of Sheffield, School of Language and Culture
Partners/ Collaborations	La Nuestra Fútbol Feminista (Argentina) and the Museu do Futebol in São Paulo (Brazil)
Location	Argentina, Brazil and Colombia
Dates	December 2017 – April 2021
Budget	AHRC-GRCF (£49.881 + £828 of additional funding)
Research Subjects	Cultural history; Cultural studies; Languages and literature; Social anthropology; Sociology; Women and gender studies.

Objectives	› Explore obstacles to women's and girls' participation in football, and develop understandings of the ways in which their participation in, and representation through, football contributes to development goals; › Bring together for the first-time academic researchers from the UK with their equivalents in Argentina, Brazil and Colombia, as well as researchers with non-academic partners with a stake in the field of fútbol femenino/futebol feminino.
Methodology	› Study of visual and textual representations of women's and girls' participation over time as well as in national and international frameworks; › Organisation of four workshops in Argentina, Brazil and Colombia and creation of a research network; › Production of a series of recommendations for local, national and international agencies (governmental and nongovernmental) around best practice to increase equality of access to — and representation in — football for women and girls.

Findings, Impacts, and Success Stories

Football is a form of popular culture and daily practice in many countries, particularly in Latin America. In this context, football constitutes a central dimension of cultural citizenship and it is often used as a means of constructing communities' identity, and/or engaging with local initiatives, and national narratives. However, the focus has almost always been on football played by men and until very recently it has been considered a male preserve. Combining interdisciplinary and multi-directional approaches, this research project explores obstacles to women's and girls' equal engagement in football, as players or spectators, and how their participation is mediated via gendered written and visual texts. In addition to academic research, the organisation of four international conferences in Argentina, Brazil, and Colombia brought together over 450 interested parties for the first time. These events created synergies through a research network including academics, researchers, students, leaders of sport for development projects, directors of football clubs, members of regional and national football federations, current and past players, and social media activists from the three countries, as well as the UK and United States. Discussions around the numerous presentations were rich and detailed and fed into blogs and online debates, with publications forthcoming.

These network events contribute to improved symbolic inclusion and representation of women's football, by inviting journalists and promoting contributions by and about women. This experience has changed perspectives of both academics' and community project leaders (including *La Nuestra* in Argentina, the *Guerreiras* project in Brazil and *Formas Íntimas* in Colombia), engaged public opinion and contributed to influencing ways of speaking and terminology used in the football environment. The practical impacts of the project are demonstrated by a series of consequential events: shortly before the 2019 Women's World Cup (WWC), a Brazilian reporter who attended the event in Rio de Janeiro (April 2019) referenced the event and spoke of the need to challenge the language used to talk about women's football and the players themselves during the WWC; immediately after the WWC *Placar*, Brazil's leading sports magazine, the subject of analysis of several of our presentations, published an apology (No.1453, July 2019, p.4) for its depiction of women and women's football over the preceding decades; the

same magazine then devoted a special issue to women' football (No.1457, Nov. 2019); the Colombian magazine *Fémina Fútbol* devoted several pages of its May 2019 edition (no.5, pp. 12-14) to discussing the network's event in Rio the previous month; several members of the network were included in *Pelota de Papel*, a 2019 anthology of football stories by women published in Buenos Aires; and a member of the project's network published her MA dissertation *'Football, Women and Power'* (2019) in Buenos Aires.

Figure 30. From Sexualised to Celebrated: the first front cover of Brazil's most popular sports magazine to feature women's football (13/07/1984, left) and the first issue devoted entirely to women's football (Nov. 2019, right). Project: 'A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America' (ref. 1). Photograph by David Wood.

Moreover, the comparative nature of the research findings contributes to increasing our understanding of the impact that football has had on discrimination and inequalities across Latin America. This project demonstrates how football can contribute towards the achievement of gender equality and enhancement of women's and girls' personal well-being, empowerment, recognition, and inclusion into national narratives regardless of race, sexuality and social class. The research outcomes have fed into the ongoing work of football-based NGOs (*lovefutbol.org*, *Discover Football* and *La Nuestra Fútbol Feminista*), which actively took part in the project activities, and are currently being transformed into practical recommendations and a manifesto targeting local and national football federations to improve gender equality, empowerment, and representation. The project's findings fed into the work of the Commission for Women's Football established by the Brazilian Football Federation (2019), notably via the presence of the project's Brazilian Co-I as a member of the commission to investigate issues around women's football. This has contributed to the appointment of a woman manager to the Brazilian women's team and to the appointment of a member of the Brazilian NGO partner *Guerreiras* Project to the position of Coordinator of Women's Football Programmes within the Brazilian Football Federation.

14 Engagement Activities

- 4 Engagement focused website, blog or social media channel
  - AHRC website item
  - Project website
  - Twitter feed
  - University homepage story International Women's Day
- 5 Events, workshops or similar
  - Buenos Aires network event
  - National Football Museum day-school
  - São Paulo network event
  - Medellín network event
  - Project event, Fundação Getulio Vargas, Rio de Janeiro
- 3 Talks or presentations or debates
  - Upfront and Onside: The International Women's Football Conference
  - Post-film discussion at the 2019 CineFood Festival in Rio de Janeiro
  - 2019 Pint of Science Festival
- 1 Media interview, press release, press conference or other response to a media enquiry
  - Liberation Women's World Cup interview
- 1 Formal working group, expert panel or dialogue
  - Women's Football Commission, Brazil

Figure 31. Approaching the construction site of the to-be-relocated village of Laprak at Gupsi Pakha in Gorkha district, Nepal. Project: After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster (ref. 3). Photo by Michael Hutt, March 2019. The prospective relocation of this village was the subject of a blog by Hutt and Khem Shreesh at https://sway.soscbaha.org/blogs/a-visit-to-the-epicentre/, republished in Nepali by the BBC Nepali Service at https://www.bbc.com/nepali/news-48049766

Case Study 2. After the Earth's Violent Sway: The Tangible and Intangible Legacies of a Natural Disaster (ref. 3)

PI	Michael Hutt
Co-Is	Stefanie Lotter and Mark Liechty
Research Organization	School of Oriental and African Studies, SOAS South Asia Institute
Partners/ Collaborations	Social Science Baha (Nepal) and Martin Chautari (Nepal)
Location	Nepal (South Asia)
Dates	February 2017 – September 2020
Budget	AHRC-GCRF (£576,418)
Research Subjects	Asian and Middle Eastern studies; Cultural and museum studies; Heritage management; History; Political sciences and international studies; Social anthropology

Objectives	› Help to build resilience in the face of future disasters by analysing the ways in which pre-existing historical, cultural and political understandings serve as normative frameworks through which the disaster and its aftermath are interpreted; › Raise levels of public understanding of the social, political and cultural impacts of Nepal's 2015 earthquakes.
Methodology	› Documentation and analysis of the history of earthquakes in Nepal and their impacts on Nepali society as well as similarities and divergences between the Nepal government's responses to them over time; › Dissemination of research questions and preliminary findings via a website, a research blog, and several researcher interviews, mostly with the Nepali-language media; › Creation and publicization of an open-access SWAY Digital Library.

Findings, Impacts, and Success Stories

The project supports building resilience in the face of future disasters by analysing the ways in which pre-existing historical, cultural and political understandings serve as normative frameworks through which a disaster and its aftermath are interpreted. Using Nepal as a case study, the project alerts disaster management professionals and policymakers to the impacts of natural disasters beyond the purely physical and humanitarian. This is achieved through interactions with key agencies in Kathmandu (e.g. UNESCO Nepal, the Nepal government's National Reconstruction Authority, UK Department for International Development) and presentations at international Disaster Studies conferences.

The project raises levels of public understanding of the social, political and cultural impacts of Nepal's 2015 earthquakes by disseminating its research questions and preliminary findings in Nepal, and among Nepal-focused researchers and development practitioners worldwide. While waiting for formal research outputs and scientific publications to appear, the project makes the interests, activities, and findings of its researchers available by other more immediately accessible means: the launch of a website in 2017, including a research blog which has recorded nearly 20,000 views to date; articles in national and international media; the sharing of research-based insights in interviews with the Nepali news media; the compilation and online publication of bibliographies; and the creation and publicization of an open-access SWAY Digital Library.

In particular, the SWAY Digital Library provides those interested in the legacy of the 2015 disaster with an extensive digital database of universally accessible research materials, enhancing the scope for future research in and on emergencies and disasters in Nepal. Disaster response and recovery literature from governments, newspapers and NGOs generally tends to be available only for certain (short) periods of time and is not always accessible to different kinds of public audiences. Harnessing the potential of the internet to store and widely disseminate the information, the digital library brings content together and makes it cross-searchable. Housed in the context of a solid research institution (SOAS) with a more immediate appreciation of information, and distant from the scene of disaster and recovery, the digital library allows Nepal earthquake documentation to proceed as well as the preservation of the digital resources in the long-term.

The digital library currently contains over 2500 digital items, including books, journal articles, newspaper articles, NGO and government reports, photographs, and video recordings. To date, 1518 of these objects have cleared copyright and are available to the general public. The digital library is still a work in progress and new content continues to be added. The project's academics have curatorial access that allows them to analyse content before public release via the online platform. To aid discovery, the digital library utilises internationally standardised data-elements, as well as internationally established keywords and genre terms in both English and Nepali. Where possible, text in page images is converted into searchable text and other materials are transcribed or indexed. The use of the digital library has increased since it began, from 384 uses in November 2015 to 6,477 uses in January 2020, with monthly use in 2019 roughly averaging 5,000 uses per month.

15 Engagement Activities

- 6 Media interviews, press release, press conference or other response to a media enquiry
  - An interview with the PI, Michael Hutt, (in Nepali) was published in the Saturday 'Koseli' supplement of Kantipur, Nepal's leading daily newspaper, on 2 December 2017
  - A 46-minute interview with the PI (in Nepali) was broadcast on Kantipur TV broadcast on 14 February 2018
  - The PI gave an interview to Radio Sailung in Charikot (in the severely-affected Dolakha district) on 4 February 2018
  - John Whelpton (SWAY project researcher) interview with Kantipur newspaper (Nepal)
  - Publication of Nepali translation of research blog
  - Publication of op-ed pieces in the Nepali print media by Jeevan Baniya (Researcher, Social Science Baha)
- 2 Events, workshops or similar
  - The project convened an international conference titled 'Epicentre to Aftermath' in collaboration with the SOAS South Asia institute. An edited volume based on this conference will be published by Cambridge University Press in 2021
  - NEEDS conference panels in 2018 and 2019
- 5 Talks or presentations or debates
  - Presentation to the CEO and Executive Committee of the Nepal Government's National Reconstruction Authority
  - Project presentation to Department For International Development (Kathmandu)
  - The project convened panels at the annual Kathmandu conference on Nepal and Himalayan Studies in 2018 and 2019
  - PI Hutt presented his work on the Dharahara at the Martin Chautari research institute in Kathmandu in 2018
  - Hutt, Lotter and Liechty have presented aspects of the project's research at the Britain-Nepal Academic Council's annual study days in 2018 and 2019.

- 2 Engagement focused website, blog or social media channel
  - Sway project featured as AHRC Heritage case study
  - Website dissemination

1 Research Databases and Model

- 1 Database/Collection of data
  - Sway Digital Library

Figure 32. Using virtual reality to enhance access to valued heritage for bridge-building in refugee community in Jordan. Project: Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe project (ref. 5).

Case Study 3. Building Resilience, Wellbeing, and Cohesion in Displaced Societies Using Digital Heritage: The BReaThe project (ref. 5)

PI	Adrian Evans
Co-Is	Karina Croucher, Owen Greene and Andrew Wilson
Research Organization	University of Bradford
Partners/ Collaborations	Mercy Corps (co-operation with ISHRAK Programme in Azraq Camp), Southern Azraq Women Association and Jordan Heritage
Location	Jordan
Dates	February 2019 – September 2021
Budget	AHRC-GCRF (£84,297)
Research Subjects	Archaeology and heritage; Community resilience-building; Cultural and museum studies; Tangible and intangible heritage; International development; Peace studies; Refugees and displaced peoples; Tools, technologies and methods; Heritage management; Science-Based Archaeology

Objectives	› Investigating the potential for using enhanced access to heritage, including Virtual Reality (VR) and to foster resilience, wellbeing and cohesion of refugee, displaced and host communities; › Develop approaches and good practices for wider uses of heritage resources to the benefit of refugee, displaced and conflict-affected and host communities in other regions.
Methodology	› Community workshops, consultation meetings, sectoral focus groups, generating resources to enhance access to tangible and intangible heritage that community members identify as valued; intercultural events; and follow-up activities in Azraq camp and Azraq town; › Development of applied (pilot) projects providing VR experience and heritage, engaging with Syrian refugee, and host-refugee communities in Azraq. › Embedding BReaThe Project approach within on-going community resilience and well-being processes.

Findings, Impacts, and Success Stories

This GCRF Follow-on project builds on the successes of the AHRC-funded *Augmenting Jordanian Heritage* and *Fragmented Heritage* projects, as well as drawing on aspects of the *AHRC-funded Continuing Bonds: Exploring the meaning and legacy of death through past and contemporary practice* and on community resilience-building programme experience in fragile and conflict areas through Peace Studies and International Development. These projects allowed the research team to become familiar with the country, to establish a relevant network with local stakeholders and to develop a widely applicable methodology for engaging with fragile or divided communities and building interactive 3D models and environments using web scraped and donated photography. Learning from this experience and working together with Mercy Corps, Southern Al-Azraq Women Association and Jordan Heritage, *The BReaThe Project – Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage* harnesses the potential of digital heritage to foster social cohesion, wellbeing and peacebuilding in displaced and conflict-affected communities in Jordan. In this context, best practice experience with inclusive community engagement is applied: different sectors of the community (male, female, youth, young adult, elders) identify valued heritage that they want to access; and community workshops and cultural events, including dances and demonstrations, are organised in Cultural Heritage Festivals, to facilitate engagement in both Azraq camp and Azraq Town. Immersive VR and other techniques are used to enable refugee and mixed communities to access tangible and intangible heritage that different parts of the community value, but which are no longer accessible to them due to displacement and/or destruction.

Digital heritage plays an innovative, creative, and affective role in reconnecting and stimulating a dialogue between Syrians, Druze, Bedouins, Chechen, and other minority groups, in a context where communities are inevitably diverse and challenged by social, political, ethnic, gender, and other divisions; and are affected by tensions, stress, and feelings of isolation. Intra and inter-community discussions and other bridge-building is conducted around sharing cultural heritage, providing valued entry-points and contexts for exploring roles and identities. Discussions encourage people to engage with sensitive issues with a flexible approach and to appreciate and recognise diversity as intrinsic to the understanding of heritage, using it to enhance bridge-building, connections, and resilience. In addition, the project supports younger individuals with fragmentary and negative memories of their past to connect and engage with the wider legacy of their community. This positive experience contributes to enhancing heritage awareness and education as well as improving communities' sense of belonging, confidence-building, resilience, and psycho-social wellbeing, strengthening mutual confidence, intergenerational and community cohesion. The project findings can be used to promote and enable appropriate conflict and gender-sensitive uses of digital heritage assets to other refugee, displaced, and conflict affected communities. Relationships have already been established with local municipal authorities for follow-up activities and with the United Nations High Commission for Refugees (UNHCR) community protection working group with a view to incorporating methods tested in this project into policy for program delivery initiatives. Future research could explore heritage applications within mental health and psychosocial support settings and the use of immersive digital tools (virtual, mixed, and augmented reality) in healthcare applications.

9 Engagement Activities

- 5 Events, workshops or similar
  - Bradford Science Festival, 2019
  - Highland Show UK Gov-Mercy Corps, 2019
  - Mind the Mind Now: International Conference on Mental Health and Psychosocial Support in Crisis Situations, 2019
  - Workshops with local stakeholders in Jordan involved with refugee and displaced communities and host-refugee communities, including CSOs, INGOs and humanitarian and development organisations
  - Café Scientifique presentation and discussion, 2020
- 1 Engagement focused website, blog or social media channel
  - BReaTHe project Twitter
- 1 Formal working group, expert panel or dialogue
  - UNHCR Jordan, 2019
- 2 Media interview, press release, press conference or other response to a media enquiry
  - Numerous, including: Highland Show BBC radio interview
  - BCB Community Radio – Bradford Science Festival

Figure 33. The Mountain Aglow exhibit with Soufrière Hills Volcano in the background. Project: 'Disaster Passed. Resilient Caribbean Futures via shared Knowledge of Recent Disasters' (ref. 24). Source: https://mountainaglow.com

Case Study 4. 'Disaster Passed'. Resilient Caribbean Futures Via Shared Knowledge of Recent Disaster (ref. 24)

PI	Jenni Barclay
Co-Is	Maria Teresa Armijos Burneo and Wendy Jayne McMahon
Research Organization	University of East Anglia, Environmental Sciences
Partners/ Collaborations	Made Design Agency, British Red Cross (UK), Montserrat Volcano Observatory (MVO) (Montserrat), University of the West Indies (Jamaica), Overseas Development Institute (UK), Rocksolid Graphics and Print (UK) and Output Arts (UK)
Location	Monserrat
Dates	January 2019 – January 2021
Budget	AHRC-GRCF (£81,767 + £4,000 additional funding)
Research Subjects	Cultural and museum studies; Geosciences; Cultural history; Human geography; Environmental geography; Geohazards; Imperial/Colonial history

Objectives	› Highlight the importance of cultural and historical knowledge in disaster risk reduction in the Caribbean; › Help shaping effective strategies for disaster risk management, both directly in a country where they are responding to future hydro-meteorological risks while recovering from a geophysical disaster (Montserrat) and indirectly in the UK via agencies responsible for providing support and advice during and after hazardous events.
Methodology	› Creation of an exhibition in Monserrat targeting local communities and based on a wide cross-section of local views; › Creation of an exhibition in the UK to showcase the research findings across Dominica, St. Vincent and Montserrat and inform those responsible for shaping response and policy in the English-speaking Small Island Developing States (SIDS) in the Caribbean; › Creation of a website as a digital tool to bridge between different communities, enhance conversations between community groups, document cultural products and resources in a process of continuous and mutual sharing and learning.

Findings, Impacts, and Success Stories

'*Disaster Passed*' highlights the importance of cultural and historical knowledge in disaster risk reduction and the role that cultural responses can play in helping people coping with natural hazards in the Caribbean. The SIDS are a region frequently challenged by climate change impacts, hurricanes, volcanic events and other natural hazards. In this context, finding ways to adequately respond, implement disaster risk reduction strategies, sustain livelihoods and well-being, and improve communities' resilience is urgently needed. Priority should not only be given to rebuilding physical infrastructures and services, but also to developing more integrated and inclusive recovery strategies, taking into account cultural, social, economic and environmental aspects at the same time.

This 'Follow-on-Fund' project built on a previous GCRF-funded research entitled *Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat* (ref. 29). Bringing together interdisciplinary expertise, methodologies and practices, *Explosive Transformations* explored how response to and recovery from volcanic events in St Vincent and Montserrat have been shaped by cultural memory and narratives, and how these can be used to foster new models of scientific, social, and political development. To achieve this, the project carried out a historical systematic and comparative investigation of local population's responses to natural hazards. This included examining how local people have dealt with crises and how recovery was undertaken, using literary records, oral traditions and histories, songs and other artistic expressions as well as carrying out interviews and focus groups with local inhabitants and the islands' diasporas in the UK. By analysing local stories, the research revealed how contemporary responses to disaster risk management are still connected to the legacy of enslavement and colonial power structures.

'*Disaster Passed*' builds on three main previous research findings from *Explosive Transformations* and *STREVA-Strengthening Resilience in Volcanic Areas*:

- cultural responses to hazardous events in the Caribbean contain powerful knowledge about impacts, response and recovery;
- the process of their transmission provides a strong mechanism to include communities in their own preparedness and recovery;
- the historical as well as the recent past contains important knowledge that deepens understanding of how and why people place themselves in areas of high risk (problems) but reveals important strategies or moments when national and international response counteracts the impacts of hazardous events (solutions).

Taking these outcomes into account, the interdisciplinary team of '*Disaster Passed*'—including scientists, literary analysts, historians, artists and social scientists—created a mobile, creative, and accessible exhibition called 'The Mountain Aglow Exhibit'. The exhibition celebrates how the community has coped with the long-term challenge of a volcanic eruption, while also showing how the arts and science can together improve understanding of natural hazards and provide key messages about future preparedness. The exhibition has commemorated the past, celebrated the creative response by the community, and acted as an educational tool and reminder of how volcanoes behave and how to respond to them. Local communities—the primary beneficiaries of this project—are actively engaged in preparing the exhibit, which captures the themes that local people (interviewed during the project) highlight. This cultural activity (carefully designed in terms of language use and location choice) provides a space for participants to discuss, exchange experiences, build confidence, share, and generate different types of knowledge that could be readily used in future responses to hazards. Co-design and co-production with the MVO is crucial to engage local communities and help improve local understanding of the volcano, of the importance of improving monitoring/decreasing risks, etc. The exhibition was displayed at the Montserrat National Museum (Dec 2019 – March 2020) and at the Monserrat National Trust (March 2020) where it was displayed again in July – August 2020 for the 25th anniversary of the eruption. The exhibition can be booked and used by community groups to display at cultural and educational events, or for other purposes. For example, the exhibition was used during the Literary Festival: it was first at the Cultural Centre and then moved for another event in the Montserrat Community College, who displayed it for two weeks to the students of the College and of the Secondary School.

Finally, a website co-designed with local communities, who have contributed the content and can continue to feedback and add to it, provides empowering messages about the value of local knowledge, culture, and science in tackling environmental hazards. The website allows Monserrat communities and the island's diasporas to connect and share stories, testimonies, and memories of their geo-cultural heritage in creative and innovative forms, such as music, sound recordings, images, poetry, and other forms of cultural expression. The website is also a repository and digital archive of all these materials, which were not previously kept anywhere else and risked being lost forever. The final phase of the project—now delayed due to Brexit and COVID-19—is to use the research findings to inform and influence UK decision-makers and aid-donors around how they can provide support and improve resilience and preparedness in the Caribbean during and after future hazardous events.

2 Engagement Activities

- 2 Events, workshops or similar
  - Exhibit display, talk and launch at Montserrat Literary Festival
  - Norwich Science Festival

2 Creative and Artistic Outputs

- 2 Artistic/Creative Exhibitions
  - Mountain A Glow
  - NEST

Figure 34. Marine debris on beach. Photograph by Tim Hufner on Unsplash.

Case Study 5. Enduring Connections (ref. 28)

PI	Sara Penrhyn Jones
Co-Is	Bryony Onciul and Anna Woodham
Research Organization	Bath Spa University, College of Liberal Arts
Partners/ Collaborations	National Trust (UK), Museum of World Culture (Sweden), International Union for Conservation of Nature (IUCN) (Switzerland)
Location	Kiribati
Dates	November 2016 – April 2018
Budget	AHRC-GCRF (£79,960) + AHRC Research Grant (£5,000)
Research Subjects	Climate and climate change; Cultural and museum studies; Ethnography and anthropology; Heritage management; Visual arts

Objectives	› Inform the broader development field about the specific challenges faced by Kiribati and Small Islands Developing States (SIDS) in general; › Explore the scope and limitations of attempts to preserve heritage in face of rapid environmental change or when the natural environment itself is heritage at risk; › Understand heritage local meaning and increase awareness on its importance to tackle climate change; › Empower local cultural organizations to implement locally-identified and community-driven sustainable development goals and strategies for environmental challenges.
Methodology	› Co-design a community-level programme towards sustainable development and its evaluation through focus-groups; › Creation of a collaborative film together with a local artist and cultural heritage expert to provide a multi-faceted representation of Kiribati and its heritage through a local lens; › Interviews with cultural sectors workers, government ministers, officers and other stakeholders.

Figure 35. Marine debris on beach. Photograph by Dustan Woodhouse on Unsplash.

Findings, Impacts, and Success Stories

Kiribati is a low-lying nation with 33 atolls scattered across the Pacific Ocean and a least developed country in the DAC list. Efforts to foster sustainable development in Kiribati are even more challenging as climate change impacts (e.g. storm surges and rising seas) require adaptation strategies, migration plans, and the potential displacement of around 110,000 inhabitants by the end of this century. The research project provides a better understanding of the impacts of climate change on local culture, but also of how—often overlooked—cultural aspects, such as community's way of life, values, stories, and beliefs, relate to climate change and should be part of adaptation strategies and responses. The main objective is to produce a deeper appreciation of what is at stake and to promote more integrated and effective sustainable development solutions.

Enduring Connections is a co-designed, community-level programme to implement and evaluate a heritage-based sustainable development project able to tackle climate change. Through a creative, experimental, and participatory approach, the project also supports a process of decolonisation and indigenisation of heritage practice. By hearing local voices and perspectives, the project helps the research team to be self-critical and to understand the importance of collaborative research and building reciprocal relations with communities, so that the research benefits them in the ways that most matter to local people. The project aimed to implement and evaluate a heritage-based sustainable development project able to tackle climate change. Academic investigations are complemented by a participatory approach actively engaging local partners and communities. Carrying out fieldwork, on-site activities, and pro-actively engaging a local grassroots organization (KiriCAN) to understand communities' needs, the project has evolved over time to identify new goals to better respond to local (environmental) priorities. The construction of a successful partnership with KiriCAN, formally contracted as part of the project, is crucial to successfully deliver this community-driven work and ensure non-exploitative research practice.

A consultation with several communities living in the highly populated city of South Tarawa allowed KiriCAN to identify the issue of waste management as a local priority. Inadequate rubbish collection and poor waste management were seriously affecting not only the local environment, but also people's health and quality of life. The practical response was to buy two trucks to collect waste and rubbish and to train local volunteers on how to use them. With the support of local communities and trainees, the trucks were used to clean up after flooding. The impact of this activity was evaluated through a focus group with KiriCAN members, which highlighted the success of the programme in increasing affected communities' self-efficacy and supporting local mobilisation to tackle environmental issues. The implementation of this project activity helps to increase local ownership and to raise the profile of KiriCAN, which is willing to build on this work and to raise revenues and attract (human, financial, and technical) resources to guarantee the long-term sustainability of the project's impacts.

In parallel, the project increases awareness of Kiribati's culture and indigenous heritage, at risk due to climate change, through the production and dissemination of a collaborative film in a local language. The film, co-created with the local cultural heritage expert and artist Natan Itonga, provides another perspective on Kiribati and its heritage, generally represented as a 'drowning paradise' and considering the ocean as a threat and not as

an important local resource. This collaborative creative process offers a counterpoint to understand local heritage meaning and increased awareness on the importance of protecting the ocean as integral part of local identity, territory, and economy, but also to indigenous knowledge, beliefs, and rituals. This creative process allows researchers to spend time and share experience with local people, carry out long off-camera interviews with community members, better understand local culture and values, and deepen reciprocal relationships. Reciprocity is also cultivated by inviting Natan Itonga to a cultural visit to UK museums hosting collections from Kiribati. These visits support knowledge exchange and a decolonisation and rebalance process allowing the museums, on the one hand, to update their collection records and exhibits and, on the other hand, to take this information back to Kiribati, make them accessible to local people, and support the reconnection to their material culture.

Finally, the project explores Kiribati's cultural sector's planning for climate change and potential displacement by conducting a series of interviews with cultural sector workers, government ministers, officers and other stakeholders. The findings outline how current governmental support to the cultural sector is underdeveloped and under-resourced: very minimal consideration is given to disaster planning, conservation and potential impacts of climate change into historical paper records, museum collections and archives; and how heritage is mostly narrowly used as a tool for economic development through tourism rather than as a means for community and sustainable development. The project findings and methodological approach can inform, guide, and support the local cultural sector's future development towards a greater consideration not only of climate change issues, and promote sustainable tourism strategies and resilience through heritage and indigenous knowledge.

8 Engagement Activities

- 2 Talks or presentations or debates
  - AHRC and Association of Critical Heritage Studies conference in London
- 1 Event, workshop or similar
  - Workshop in Manchester Museum "We need to talk about climate change"
- 1 Engagement focused website, blog or social media channel
  - Webinar "How can the Heritage/Museum sector engage the mainstream public with climate change?"
- 1 Broadcast e.g. TV/radio/film/podcast (other than news/press)
  - Public Screening: Troubled Waters film at Museum of World Culture in Gothenburg, Sweden

1 Creative and Artistic Output

- 1 Film/Video/Animation
  - 'Ribono'

3 Other Outputs

- Film used as an educational resource by the National Trust
- I-Kiribati cultural heritage expert source-community visit to multiple historical UK museum collections from Kiribati
- Informing a new MA on Heritage and Environmental Change

Figure 36. A woman practices the traditional seed selection of finger millet in India. Project: 'Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience' (ref. 45). Photograph by Nawraj Gurung. Source: https://www.iied.org/indigenous-food-systems-biocultural-heritage-agricultural-resilience

Case Study 6. Indigenous Food Systems, Biocultural Heritage, and Agricultural Resilience (ref. 45)

PI	Krystyna Swiderska
Co-Is	Chemuku Wekesa, Ajay Rastogi, Yiching Song and Philippa Ryan
Research Organization	International Institute for Environment and Development
Partners/ Collaborations	Farmer Seed Network China, Kenya Forestry Research Institute, Lok Chetna Manch (India) and Royal Botanic Gardens, Kew (UK)
Location	Kenya, India and China
Dates	October 2019 - September 2021
Budget	AHRC-GCRF (£174.853)
Research Subjects	Agri-environmental science; Archaeology; Development studies; Cultural history; Cultural and anthropological geography; Landscape and environmental archaeology; Natural resources, environment and rural development

Objectives	› Advocate the importance of traditional agricultural knowledge, crops and biocultural landscapes for agricultural resilience; › Design new interdisciplinary research on indigenous food systems past and present, from farm to plate, including crops, processing and cuisine in China, India and Kenya; › Establish a new interdisciplinary partnership and global network for research on indigenous food systems.
Methodology	› Agricultural surveys, oral history, archaeological and ethnobotanical methods; › Co-design and co-production, development of new empowering interdisciplinary research; › Organisation of interdisciplinary workshops in the UK, China, India and Kenya to explore the role of indigenous food systems in agricultural resilience, nutrition and sustainability.

Findings, Impacts, and Success Stories

There are approximately 476 million Indigenous Peoples around the world, who are particularly vulnerable to food insecurity and poverty. Yet Indigenous Peoples conserve about 80% of the world's biodiversity and represent most of the world's cultural diversity. Moreover, Indigenous food systems and traditional agricultural practices are highly valuable in terms of biodiversity richness, nutritional properties, local adaptation and resilience to climate change, natural disaster risk reduction, and sustainable energy consumption. Their importance is also critical for Indigenous Peoples' health, well-being, cultural identity, worldviews, and spiritual values. However, this uniqueness and Indigenous Peoples' rights are often under prioritised by national and local governments in the name of modernisation and economic development, which has led to growing health issues for many Indigenous Peoples (e.g. obesity and diabetes), poor environmental management, and biodiversity loss. Furthermore, failure to recognise Indigenous Peoples' rights to natural resources and land constitutes a major threat to Indigenous food systems and the fact that Indigenous Peoples are often left out of policy discussions contributes to widespread marginalisation and racial discrimination.

Benefitting from an interdisciplinary team made up of humanities academics together with sustainable agriculture and ethnobotanical researchers—and actively working in partnership with Indigenous Peoples—this research project focuses on the concept of 'biocultural heritage' to better reflect the interconnections between humanity and nature, including holistic world views, spiritual beliefs, and cultural values relating to nature and universe. This is an original aspect of the research project because generally Western paradigms have separated nature and culture by working in silos. The project co-designs new interdisciplinary research with Indigenous communities in India, China and Kenya, generating evidence of the long-term use of traditional crops, suggesting suitability for local agricultural contexts, and informing agricultural researchers, policymakers, and communities about sustainable crop choices. Through the organization of a series of workshops targeting local and UK stakeholders, the project is building a wide global interdisciplinary network involving academics from different disciplines, international organizations (e.g. UN Food and Agriculture Organization – FAO), NGOs, action-researchers and Indigenous experts working on traditional food systems. The continuous collaboration, co-designing, and engagement with Indigenous Peoples is of crucial importance to support the recognition of their rights. It is a process of 'knowledge decolonization' that tailors the research approach in relation to each local context (India, Kenya, and China) to understand local food security needs and ensure that the research directly addresses them, as well as to foster community-led sustainable processes and empowerment of community co-researchers to sustain their food systems and protect their biocultural heritage territories.

A first virtual workshop, engaging Indigenous Peoples from Asia, Africa, Latin America, and the Arctic, academic institutions, and UN agencies was organised in October 2020 to examine the role of Indigenous Peoples' food systems and interlinked biological and cultural heritage—or biocultural heritage—in achieving the SDGs. In this context, Indigenous representatives emphasised that 'their ancestral food systems, based on centuries of accumulated wisdom, are not only crucial for food security and food sovereignty, but also for cultural identity, spiritual wellbeing, and land stewardship'. They also revealed how they are reviving their agroecological food systems because they are more resilient to climate change and provide more nutritious diets than modern food systems. Agroecological food systems have already proven to be vital during the COVID-19 pandemic, which exposed the vulnerability of global food chains. In the context of this global pandemic, Indigenous seeds, for examples, are used to promote social cohesion through cultural ceremonies. The workshop also underlined how more research is urgently needed to address issues, such as: protection of indigenous land and resource rights; preserving endangered agrobiodiversity and Indigenous knowledge systems; exploring women's roles in health and traditional restaurants and cuisine that are crucial for sustaining traditional crops; and greater recognition of Indigenous Peoples as experts and their active involvement in decision-making processes.

Figure 37. Crops growing along the riverbank of Ernetta Island, Sudan. Project: 'Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices, and Endangered Cultural Heritage' (ref. 51). Photograph by Philippa Ryan.

Case Study 7. Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices, and Endangered Cultural Heritage (ref. 51)

PI	Philippa Ryan
Research Organization	Royal Botanic Gardens, Kew
Partners/ Collaborations	Mohamed Saad, Head of Bioarchaeology at the National Corporation of Museums and Antiquities in Khartoum, and Mohammed Hassan, Director of the Kerma Museum, Sudan
Location	Sudan
Dates	November 2017 – August 2018
Budget	AHRC-GCRF (£78,375 +£1,868 of additional funding)
Research Subjects	Archaeology; Social anthropology; Economics, politics and environment; Landscape and environment.

Objectives	› Advocate the importance of using traditional agricultural knowledge to help create strategies for agricultural resilience; › Highlight the potential future role of increasingly little-used cereals and pulses; › Explore how ethnobotanical and archaeobotanical approaches can contribute to agricultural research.
Methodology	› Fieldwork and co-production of a community-orientated book on 'Nubia past and present, agriculture crops and food'; › Locally and regionally wide distribution of the book to families, local schools, local communities and agricultural centres in Sudan.

Findings, Impacts, and Success Stories

Learning from the Past supports the preservation of traditional Nubian agriculture knowledge. This knowledge is both endangered cultural heritage, and relevant to agricultural resilience and food security. A key output of the project is the production and distribution of a community-orientated book on 'Nubia past and present, agriculture crops and food' that was written, printed and distributed during fieldwork in Sudan and co-created with the local community. The project is funded through the Follow-on Funding for Impact and Engagement Scheme, building on an earlier AHRC project 'Sustainability and Subsistence Systems in a Changing Sudan', during which the idea for the book was first suggested during a school visit. This book provides a new means for making the research results accessible to Nubian communities in Northern Sudan, and makes available local agricultural narratives and oral histories that are not otherwise documented. The objectives of writing the book include: providing a way of recording the cultural memory of older farming practices; to make this information accessible to small-scale farming communities; and to co-produce the book with farmers and their families so the information is considered meaningful by local communities.

The book centres on Ernetta Island and the local town of Abri which are in the Sikoot region of Sudan. The book focuses on details of traditional crops and cultivation, agricultural practices and foodstuffs and how these have changed in recent decades. Associated material culture such as traditional kitchens, and less tangible cultural heritage such as the daily routines connected with older modes of agricultural practices, are also documented. A summary of the ancient history of crops grown in the region provides a long-term context to crops grown today and in the recent past. One challenge was writing it in a way suited to multigenerational audiences. This was specifically an aim as it captured stories from older farmers and at the same time was also distributed within junior and senior schools. The school age audiences know more about farming and the environment than for example, comparative age groups in the UK, so it was possible to be relatively detailed. Some of the content and initial outline is based on the previous project interview findings. During fieldwork for this new project, the research team consulted with the families we had been already working with, as well as new families, to

add and refine content including adding new topics, for example in regard to changing cuisine, social practices, and material culture connected with agricultural heritage. Two local headteachers edited the English and Arabic versions and were consulted at several stages of book development.

Another key aspect of co-creating the book is the attention to local language and terminology in the book translation. An Arabic version was written entirely in the field to make sure it was in colloquial Sudanese Arabic, as opposed to more formal Modern Standard Arabic (MSA). The glossary has transliterated Nubian words into Latin and Arabic letters—which is important because Nubian words for foods and crops are often more specific than Arabic; and Nubian is not currently a written language. An ideal extra activity with more time would have been to work with a scholar in Old Nubian to also use the old Coptic script—this sort of work would have required more than one field season, beyond the timeframe and scope of this project.

The book is widely distributed locally and regionally to families, local schools, the local community, and agricultural centres in Sudan (732 copies in Arabic and 245 in English). In the local study area, the book was distributed to the villages on Ernetta Island and the local town of Abri, including to schools where we participated in Arabic and English classes. Local schoolteachers state that the book will also be used in future English classes as well as for talking about local agriculture and histories. The book is also given out in other villages in the broader Sikoot region of Nubia. Further away, we distributed the book to, and arranged meetings with, cultural and agricultural organisations, including the Kerma museum, the Agricultural Research Centre, Dongola University, Faisal Cultural Centre and Sudan National Museum, the National Corporation of Museums and Antiquities, Qatar Sudan Archaeological Project, Faisal Cultural Centre, British Council, FAO, and Khartoum University. The impact of the book was discussed during a seminar at the agricultural facility of Dongola University. Participants commented that this output provides an important context to agricultural researchers in Sudan about both recent and

ancient crop changes and, additionally, information about local issues with recent wheat crops that was not widely known.

3 Engagement Activities

- 2 Events, workshops or similar
  - Lessons From The Past: Archaeology, Anthropology And The Future Of Food
  - Science Saturday
- 1 Formal working group, expert panel or dialogue
  - Seminar at Dongola University

Figure 38. Mural picture of Textile Female Workers inside M50. Project: 'Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera' (ref. 61). Photograph by Jiajing Zhu.

Case Study 8. Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera (ref. 61)

UK PI	Haili Ma, University of Leeds
CHINA PI	Changyong Huang, Shanghai Theatre Academy
Co-Is	Nick Kaye, Exeter University
Research Organization	University of Leeds, School of Performance and Cultural Industries
Partners/ Collaborations	Shanghai All-Female Yue Opera House, Tiangong Creative Ltd., Bandu Music, Shanghai Yue Opera House M50 Creative Arts Cluster
Location	China
Dates	November 2018 – February 2022
Budget	AHRC Newton (£246,196.79)

Research Subjects	Development studies; Drama and theatre studies, Performance and live art; Creative industries
Objectives	› Reconnect the history of the Chinese textile factory female workers, and their art form Shanghai all-female Yue opera, with today's M50 creative cluster and its visitors, whilst exploring development of creative economy in China.
Methodology	› A mixed-methods approach to collect data, including archived document compilation, in-depth interviews, audience focus groups, participant and audience surveys, discussion groups; › A series of public site-specific installations using digital media to re-present the evolution of Shanghai all-female Yue Opera and its link with post-industrial heritage site M50.

Findings, Impacts, and Success Stories

After the decline of many manufacturing industries, the adaptive re-use of abandoned industrial sites and the creation of contemporary art clusters has frequently been used as a strategy for post-industrial economic development and cities' revitalisation. This research project focuses on Shanghai M50, one of the first textile factories turned into a China creative cluster, which is today the symbol of China's transitional economy: from 'made in China' to 'created in China'. In this context, old textile factory buildings currently host more than 140 artists' studios, galleries, and other creative companies from over 20 countries and regions, as well as coffee bars, restaurants, and boutique shops. However, the M50 district barely reveals to visitors its historical interlinkage with the Shanghai All-female Yue Opera. This traditional form of urban popular culture entered in the city from the rural countryside following the influx of Zhejiang female workers, migrating to the city in the 20th century to work in the textile industry which formed an important part of their cultural identity. This research project reconnects the contemporary urban reality of M50 with the cultural and artistic legacy of its historical industrial past linked to China's first working-class women and offers a relevant model for the sustainable development of other traditional opera forms across China. In this way, the project also questions the role and nature of todays' creative clusters and working-class arts in creative economic development in China and worldwide.

The project develops a series of public site-specific installations at M50 developed through archival, historical, and contemporary audience research and collaboration with local businesses and stakeholders. The digital media installations present the evolution of Yue Opera and its patrons, China's working class women, throughout the process of China's post-industrial transition, to a broad public. Installations include the use of iPads by visitors acting as hand-held guides, large-scale projected installations of performance, the site-specific screening on monitors of contextual and other material, as well as the facilitation of visitor participation and the embedding of media into interactive objects of historical or contemporary relevance.

The project articulates Chinese opera as a popular working class migrant culture, and its artistic and socio-economy evolution in the process of China's post-industrial transition. In the process of developing such a narrative, the project brings together public and private sectors including the music business, design merchandise, and art institutions, to explore how a creative industry chain may be established. This creative industry chain is intended to enhance small and medium enterprise business development and to outlive the duration of the research project, contributing to the diversity and sustainability of Shanghai's urban creative economy. The project offers a model relevant to the sustainable development of other traditional opera forms across China, of which there are up to 300 nationwide.

1 Engagement Activity

- 1 Event, workshop or similar
- Exhibition/performance Ghost in M50 Host

Figure 39. Crowd attending the Festival of the Sea organised as part of the Reharbouring Heritage project in the area of Sainte Luce, Madagascar. Project 'Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits' (ref. 69). Photograph by Jonathan Skinner.

Case Study 9. Rising from the Depths: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic, and Cultural Benefits (ref. 69)

PI	Jon Henderson
Co-Is	Annamaria La Chimia, Luciana Esteves, Colin Breen, Paul Lane, Garry Marvin, Stephanie Wynne-Jones and Solange Macamo
Research Organization	University of Nottingham, School of Humanities (2017-20), University of Edinburgh, School of History, Classics and Archaeology (2020-21).
Partners/ Collaborations	Ulster University (UK), National Museums of Kenya, Pedagogical University, Royal Agricultural University (UK), Kenya Marine and Fisheries Research Institute, University of Dar es Salaam (Tanzania), Roehampton University (UK), Eduardo Mondlane University (Mozambique), Bournemouth University (UK), The British Museum, Pwani University (Kenya), Kaleidoscopio (Mozambique), 3deep Media Ltd (UK), World Monuments Fund (USA), British Institute in Eastern Africa (Kenya), EcoAfrica Environmental Consultants (Kenya), Western Indian Ocean Marine Science Association (Tanzania), Society for Underwater Technology (UK), UNESCO (France), Zavora Marine Lab (Mozambique), and Nautical Archaeology Society (UK)
Location	Kenya, Tanzania, Mozambique and Madagascar

Dates	October 2017 – September 2021
Budget	AHRC-GCRF, Network+ (£ 1.958.906 + £228.818 of additional funding)
Research Subjects	Marine and coastal archaeology; Climate and climate change; Cultural and museum studies; Heritage management; Deep history; Law and legal studies; Social anthropology; Environmental Science
Objectives	› Capacity strengthening at international, national, and local levels in Kenya, Tanzania, Mozambique, and Madagascar to protect, utilise and enhance the potential of Marine Cultural Heritage (MCH) for sustainable development; › Deliver impacts across three primary stakeholder groups — local communities, industry and developers, and policy-makers; › Produce evidence on MCH's contribution to sustainable development.

Methodology

- Knowledge exchange and co-creation events with local organisations and coastal groups;
- Projects funding to fill knowledge gaps that currently limit the way that MCH contributes to culturally and economically sustainable growth in East Africa;
- Mapping the overall impact of the network through various innovation project outputs.

Findings, Impacts, and Success Stories

East Africa is facing a period of extensive transformations driven by both internal dynamics and external interests and investments, particularly from Western countries, China, and Saudi Arabia. Offshore explorations for oil and gas deposits and major infrastructural and development projects, including new ports to facilitate trade with the Gulf countries, are financed to generate economic and employment benefits in the region's maritime zone. Nevertheless, these—often ill-considered—developments as well as climate, environmental and other anthropogenic changes threaten the coastal and maritime heritage of the region, which provides valuable resources to sustain life and the environment and is deeply rooted in coastal communities' beliefs, identity and community values. Even as it is clear how these investments are benefitting donor countries and investors, there are serious concerns about their ability to positively impact on local communities, particularly those most at risk.

'Rising from the Depths' (RftD) is a Network+ project that elaborates a new and sustainable model for development in Kenya, Tanzania, Mozambique and Madagascar, among the least developed countries in the world, by harnessing the potential of local tangible submerged and costal Marine Cultural Heritage (MCH) and its associated intangible aspects. Tackling a wide range of global challenges and SDGs by utilising submerged and coastal heritage, it stimulates alternative sources for income generation and ethical, ecological, inclusive, and long-lasting growth in the region. The project funds and supports local scholars and partners to implement 29 innovative projects in the region in ways that would have been otherwise impossible. An example of local practical implementation is presented in Focus 10. In this manner, RftD creates a relevant transboundary and interdisciplinary network of

A&H senior and early career researchers, government officers, scientists, policymakers, UN officials, NGOs, ICT professionals, and specialists working in heritage, infrastructure, and the marine industry. The project adopts a two-fold approach for strengthening capacities and emphasising the relevance of MCH for sustainable development: at a top-down level, it engages with national governments, international organizations, and industrial marine stakeholders and developers, alongside development law and policies; at a bottom-up level, it works directly with local community groups from the grassroots to foster sustainable models of development rooted in local practices and traditions.

At the top-down level, the project examines the effectiveness of national and international heritage policies in each country to protect MCH, a fundamental condition for its long-term safeguarding in face of development. The final goal is to support Kenya, Tanzania and Mozambique to ratify the *UNESCO Convention on the Protection of the Underwater Cultural Heritage* (2001), already ratified by Madagascar and directly linking submerged sites with the coastal terrestrial resource. Moreover, RftD raises awareness and informs policymaking on the role that MCH can play, not only in building identity and sense of place, but also in providing useful data to prevent and manage environmental risks. Finally, the project facilitates a collaboration between academia and industry to promote not only the realisation of sensitive infrastructure and development projects, but also to borrow leading-edge technologies used by the marine industry to better monitoring, documenting and enhancing cultural heritage sites. One of the main impacts of the project is its capacity to raise awareness on MCH as an important resource to marine stakeholders more widely. The project's PI, Jon Henderson, is one of the only ten worldwide archaeologists invited to the first Intergovernmental Oceanographic Commission global meeting on the roadmap for the UN Decade of Ocean Science for Sustainable Development in Copenhagen, Denmark May 12–16th 2019. At the meeting, the PI presented the overall RftD project during the official UNESCO Underwater Cultural Heritage side event to make the case for including marine heritage as part of the as part of the UN's Decade of Ocean Science for Sustainable Development 2021-2030. Through this engagement he was invited onto the organizing committee of the Ocean Decade Heritage Network ensuring that the outputs from the RftD network will feed directly into the UN Decade.

Although it is too early to track the full impact of the award it is already possible to appreciate outstanding results from some funded projects. In Madagascar, the *Reharbouring Heritage* project[71] organised a SDG focused maritime festival using dance, ethnodrama, digital, and craft arts to raise awareness of fishing community issues and show how a living marine cultural heritage contributes to tourism-related social enterprise in the region. The festival was attended by over 3000 local people and the area of Sainte Luce was economically brought to life. Feedback testified to measurable social and economic impacts of the initiative. In Mozambique, the *CoastSnap* project[72] has raised awareness of coastal change and how local communities can help record and mitigate changes. Engaging the local population in a citizen science project has brought a novel approach to addressing issues where the opinions or inputs from the wider, non-scientific, community are often not considered. In Tanzania, *East Pemba Maritime Heritage* project[73] has examined how traditional fishing methods are more compatible with sustainable development, but are increasingly being lost through competition and the markets offered by the hotels' demand for fish. In Kenya, work with a women's cooperative as part of the *MUCH to Discover in Mida Creek* project[74] developed a series of sustainable industries using the area's marine heritage and cultural capital. This has included several income generating activities for the local community including butterfly farming, bee keeping, organic farming, canoe, basketry, and fishing techniques. The women's group is now recycling waste materials such as clothes to create pieces of art such as cups, mugs, hats, mats, baskets, and other items that they display and sell at the boat yard and dhow houses created by the project. They are also using previously lost traditional methods to catch fish. Overall, the initiatives are creating real economic benefits for the local community.

71 PI: Jonathan Skinner, University of Roehampton; Co-I: Lisa Bass, SEED Madagascar.

72 PI: Caridad Ballesteros, Bournemouth University; Co-I: Jaime Palalane, Eduardo Mondlane University, and Pilale Isequiel, Lurio University.

73 PI: Mark Horton, Royal Agricultural University; Co-Is: Laura Basell, Queens University, Belfast, Abdallah Khamis Ali, Government of Zanzibar, and Abdallah R. Mkumbukwa, University of Zanzibar.

74 PI: Caesar Bita, National Museums of Kenya; Co-Is: Wes Forsythe, Mark Lamont, Simone Grassi, Pent i Turunen.

64 Engagement Activities

- 30 Events, workshops or similar
  - CoastSnap workshops
  - Community workshops
  - Visits and consultations with communities
  - Training events
  - Meetings and focus groups
- 17 Talks or presentations or debates
  - First global meeting on the UN Decade of Ocean Science for Sustainable Development in Copenhagen, Denmark 2019
  - Maritime Cultural Heritage and Development workshop
  - Meeting at UNESCO Regional Office for Eastern Africa, United Nations Office at Nairobi
  - National Museums of Kenya talk
  - Coastal Sediments 2019
  - 15th Congress of Pan African Archaeological Association for Prehistory and Related Studies, Rabat, Morocco 2018
  - Society & Sea Conference, Greenwich 2018
  - Society of Africanist Archaeologists biannual meeting 2018
  - Presentations in universities (Bournemouth University, University of Dar Es Salaam, University of York)
- 11 Engagement focused website, blog or social media channel
  - Rising from the Depths website
  - CoastSnap blogs and Facebook page
  - Innovation Project Blog - Hidden Histories
  - Johnathan Skinner Scoping Blog
  - Mark Horton Scoping Blogs
  - Snapshots of research in Maputo
  - Field survey

- 5 Formal working groups, expert panels or dialogues
  - Community workshop on Contested Heritage, Mozambique
  - Gede, Kilifi
  - Heritage and Community Development Workshop, National University of Ireland Galway (NUIG)
  - MCH in Northern Mozambique - Stakeholder meeting at CAIRIM (Centro de Arquelogia Investigção e Recursos da Ilha de Moçambique)
  - Stakeholder Meeting for Maritime and Underwater Cultural Heritage to Discover in MidaCreek
- 1 Participation in an open day or visit at my research institution/facility
  - Meeting with women's co-operative Mida Creek (Watamu Marine National Park)

1 Creative and Artistic Output

- 1 Film/Video/Animation
  - Innovation project: Festival of the Sea video

Figure 40. Inspectors of the MoT&A, Asyut department, participating in a documentation training course. Project: 'Sustainable Solutions towards Heritage Preservation in the Asyut Region, Egypt' (ref. 73). Photograph by Ilona Regulski.

Case Study 10. Sustainable Solutions towards Heritage Preservation in the Asyut region, Egypt (ref. 73)

PI	Ilona Regulski
Co-Is	Mohamed Soliman
Research Organization	The British Museum
Partners/ Collaborations	Ministry of Tourism and Antiquities (Egypt), Takween Integrated Community Development (Egypt), University of Cambridge (UK), Free University Berlin (Germany) and French Archaeological Institute in Cairo (Egypt)
Location	Middle Egypt
Dates	November 2016 – April 2018
Budget	AHRC-GCRF, British Council Newton Musharafa Fund (£77,366 + £239,232 of additional funding)
Research Subjects	Cultural and museum studies; Education; History; Human geography; Social anthropology; Heritage management

Objectives	› Implement an innovative approach to fieldwork in Egypt through the lens of historical evolution at multi-layered sites, with a focus of preserving heritage rather than only researching it; › Undertake and develop a sustainable conservation policy for archaeological sites; › Supports local interests to improve the lives of local communities, working as partners in preserving the site.
Methodology	› Better integration of preservation and heritage management methodologies and interdisciplinary specialists into archaeological fieldwork projects; › Coordination and collaboration amongst different institutions and agencies concerned with heritage preservation; › Engaging with local communities, local heritage professionals and other stakeholders through training and capacity building by hands-on experience and co-implementation of projects.

Findings, Impacts, and Success Stories

The project implemented a new approach for the sustainable conservation of Shutb, a historic city in the Asyut region (Middle Egypt), which is both a farming town and a multi-layered archaeological site. As in many other Egyptian sites, archaeological resources are under threat due to official preservation measures, illegal exploitation, looting, trafficking, destructive encroachment, and vandalism, as well as the lack of mitigation and preventative measures to deal with these challenges. In addition, an increasing population, intensification of land use for agriculture, and expanding settlements have also contributed to the destruction of the archaeological site. Moreover, the value of its urban, vernacular and intangible heritage is barely recognised by local communities, constituting another challenge to its future conservation and management. These negative impacts have not only contributed to physical urban heritage decay but have also affected local inhabitants' health, due to the proximity to garbage disposal and the pollution of both ground and water. The project, implemented by an interdisciplinary team of Egyptian and UK-based consultants in collaboration with local stakeholders and communities, developed a series of protective measures aiming at safeguarding the value of Shutb's archaeological site and historic village, preventing further degradation of the urban fabric and enhancing the socio-economic conditions of the local population at the same time. Such a holistic and inclusive approach had never been implemented in Egypt before because fieldwork and archaeological excavation projects have often been carried out in isolation from their communities and surrounding contexts. Due to this positive experience, similar approaches are now being deployed and replicated in other areas in Egypt and beyond (e.g. in Sudan).

The project conducted a heritage documentation study through scoping visits and surveys to vernacular buildings, while also establishing contact with the local community and the Asyut inspectorate—both very keen to collaborate—to understand local needs and priorities. Six field missions and a community programme targeting young generations and local residents provided new information about the site and its history and—through active local engagement—better understanding about the lifestyles of the community and their use of public spaces. The research revealed how a number of residents decided

to move away from the core of the village because of its social, economic, and physical deterioration, preferring to relocate to more modern urban districts. A survey of the urban fabric identified the most significant architecture worth documenting and preserving, their state of preservation and levels of integrity, but also the current state of infrastructure systems, waste disposal, and sewerage and freshwater networks. As a result, building profiles were developed by the research team to document buildings' features (e.g. height, state of conservation and integrity, external appearance, functions, occupant's narratives, etc.) and five residential buildings and a public space were subsequently restored and renovated aiming to offer new alternatives for the local community in maintaining their heritage in cost-effective ways. Bringing a new perspective, the project built another heritage narrative and widely disseminated the research findings not only in academic circles, but also with local communities through a book *(Asyut: Guardian City)*, short films, and stories for children. In addition, the community-focussed workshops, training, storytelling, and tour guiding around the buildings raised awareness of the value of heritage and its positive effects as a development asset as well as its potential to improve local capacities for its long-term conservation and management.

The project has also tried to reconcile heritage conservation with infrastructure development and a holistic and integrated approach to respond to communities' needs. A sanitation project was inaugurated in 2014 by the Asyut's governorate to improve infrastructure and basic services of Shutb village through a sanitation treatment and pumping station. Three years later, the Asyut project contributed to the Improved Sanitation Project (ISSIP II), which is part of a larger World Bank funded project to improve health in Egyptian rural areas. Considering the project's potential harm to the archaeological site, the Egyptian Ministry of Tourism and Antiquities (MoT&A) decided to block its implementation. The British Museum, in collaboration with Takween Integrated Community Development (ICD), organised meetings with several stakeholders, including: World Bank's representatives; engineers of the water company; the sheikh el-Balad (representing the village officials and the community); and local representatives of the MoT&A. These meetings sought to find meaningful ways to mitigate the impact of

these threats, thereby actively engaging local communities and other stakeholders in sustainable heritage preservation.

As a result, Takween ICD was contracted to assess the impact of ISSIP II on the archaeological site, the village, and its built heritage, and to produce recommendations to be adopted for the implementation of the project. In addition, the research team organised a series of meetings with the Governor of Asyut and local communities affected by the project to collect additional information on the positive and negative impacts that ISSIP II could have generated on the ground. The research findings show how strongly the sanitation project was needed by local residents to improve their living and environmental conditions and how the project started as a collective local initiative from the residents themselves. Considering these results, and during another meeting organised by Takween ICD's team with different interested parties the British Museum researchers—in unison with Takween ICD and the MoT&A—acknowledged the importance of the sanitation project to the village and its population. For this reason, they supported the project implementation, but only by finding a balance between heritage preservation and development through the mitigation of the potential negative impacts to the archaeological site and traditional buildings and the effective coordination of different stakeholders. In the end, the continuation of the sanitation project implementation got the approval of the MoT&A, in which Takween ICD recommendations were taken into consideration in its execution.

15 Engagement Activities

- 10 Events, workshops or similar
  - Context documentation and pottery training course for local inspectors
  - Training course in adaptive re-use of historical buildings (in London)
  - Drawing tours in Shutb Village
  - Four art workshops with children from the village of Shutb
  - Workshop to re-sign and re-paint the local station
  - Three workshops to provide content for the films
  - Card Game designed and developed by the project was used as a tool during workshops to create dialogue, entertain and educate by reconnecting modern Asyut with ancient Egyptian objects through captivating stories
- 1 Formal working group, expert panel or dialogue
  - Community meetings on World Bank funded Waste Water Project (Sanitation project)
- 3 Talks or presentations or debates
  - Heritage Day in the village of Shutb
  - 2 talks at Asyut University
- 1 Participation in an open day or visit at my research institution/facility
  - Annual Egyptological Colloquium held at the British Museum, London

3 Creative and Artistic Output

- 3 Film/Video/Animation
  - The Last Layer
  - The Last Layer II
  - Have you heard about Shutbs?

Figure 41. Kvareli archaeological camp (Eastern Georgia) for internally displaced children. Project: 'Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia' (ref. 86). Photograph by Nino Bakanidze.

Case Study 11. Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia (ref. 86)

PI	Emma Loosley
Co-Is	University of Exeter
Research Organization	Georgian National Museum
Partners/ Collaborations	Georgian National Museum
Location	Georgia
Dates	January 2019 – December 2021
Budget	AHRC-GCRF (£50,754)
Research Subjects	Archaeology; History; Visual arts; Ethnography and anthropology; Landscape and environmental archaeology

Objectives	› Educational capacity building.
Methodology	› Organization of summer camps and activity days for children; › Offering skills development to teachers; › Establishment of a training network involving museum junior curators and education staff interacting with regional schoolteachers.

Findings, Impacts, and Success Stories

Since the end of communism in 1991, Georgia has suffered from a series of social, political, and economic challenges, including a civil war and the Russian occupation of around 20% of the national territory. Currently, there are up to 232,700 internally displaced people (IDP) in the country, representing around 17% of the total population. All these factors play a significant role in Georgian education system, which is chronically under-funded. School buildings are often derelict constructions; teachers, who receive very low salaries (less than £90 per month), are obliged to have second jobs to cover their living costs; and the educational offer to children is not able to cover full days of school, but only two shifts (from 10am to 2pm and from 2pm to 6pm). In this context, there is an urgent need to offer advanced skills training and educational resources, especially to the most marginalised teachers and children (IDPs, domestic refugees, people living in poor rural areas, street children, ethnic and religious minorities, etc.). Moreover, teachers are asking for assistance in formulating new materials at a time when, having rejected the Communist syllabus, there is a danger that education will be hijacked by an extreme Nationalist rhetoric that will increase intra-ethnic and intra-religious tensions.

The project was implemented in partnership with the Georgian National Museum (GNM), who has taken a leading role in offering skills development to teachers and engaging with the most marginalised members of society. In line with the Ministry of Culture's Heritage 2025 strategy, the project instituted a training network to foster interaction between GNM junior curators and educational staff with regional schoolteachers and promoted museums and cultural heritage sites as educational spaces. The main goal was to change existing educational perspectives, to stimulate inclusive participation and active engagement, and to encourage children to aspire to higher education as a way to raise themselves and their communities out of isolation and poverty. Georgia struggles to recruit archaeologists, curatorial staff and other specialists in the heritage sector, and so it is hoped that these activities will encourage young people from a diverse range of backgrounds to consider working in these fields.

On the one hand, specific training on archaeological artefacts and methodologies, educational tours, and teaching packs were provided to assist 43 schoolteachers, who received a copy of four booklets (2000 copies in total) produced as part of the project to support heritage teaching to children in an interactive manner. The trained teachers asked for advice on how to replicate this experience in other regions of the country and further copies of the booklets were distributed on the GNM website and to as many schools as possible across the country. As a result, the GNM education department have been working with museum staff in the Autonomous Republic of Adjara to produce new materials and the project team has received requests from the National Museum in Mestia (Svaneti) and teachers from the Marneuli (majority Azeri region) to work with them on generating teaching guides that are sensitive to their regional identities.

On the other hand, hands-on activities in museums (e.g. Mestia museum) and cultural heritage sites (e.g. village Dzalisa), travelling exhibitions across several schools, a summer camp in Kvareli (Eastern Georgia), and day trips around Tbilisi (the 'Archaeology for Everyone' programme) were attended by a total of 169 students and offered a new educational model by taking staff and resources out from the capital to improve societal and economic inclusion, reaching ethnic and religious minorities that, for financial and cultural reasons, cannot attend activities in Tbilisi. Moreover, these activities encouraged teachers to move away from a passive learning model, typical of the Soviet era, towards a more active, engaging, and emotionally stimulating learning process by creating educational experiences through encouraging questions and interactive approaches with museum displays and artefacts. Through these approaches, children can really enjoy their visit and may wish to return, hopefully with their family and friends, increasing the impact of the project by improving heritage awareness and contributing to its long-term protection. The research project may have influenced the decision of the Georgian Government to begin 'Museum Mondays' in 2019, an educational initiative which aimed to open the GNM solely to school groups each Monday. There are further plans to include all schools in the Tbilisi area within a year and to subsequently extend the programme to provincial museums.

"The village of Shutb is privileged with valuable heritage assets that require intensive and systemic efforts towards their protection, documentation, conservation, proper management, and promotion. However, numerous threats and challenges face the protection of this heritage, including: most notably, the lack of appreciation of this heritage among the local community, the Governorate and the MoT&A except for the Archaeological Site. Hence, it was crucial to embark on a dialogue with the different stakeholders to establish a level of appreciation and understanding of the village's tangible and intangible heritage among these stakeholders, and work with them to develop a shared vision towards the protection and management of this heritage".
Heba Shama, The American University in Cairo (ref. 73)

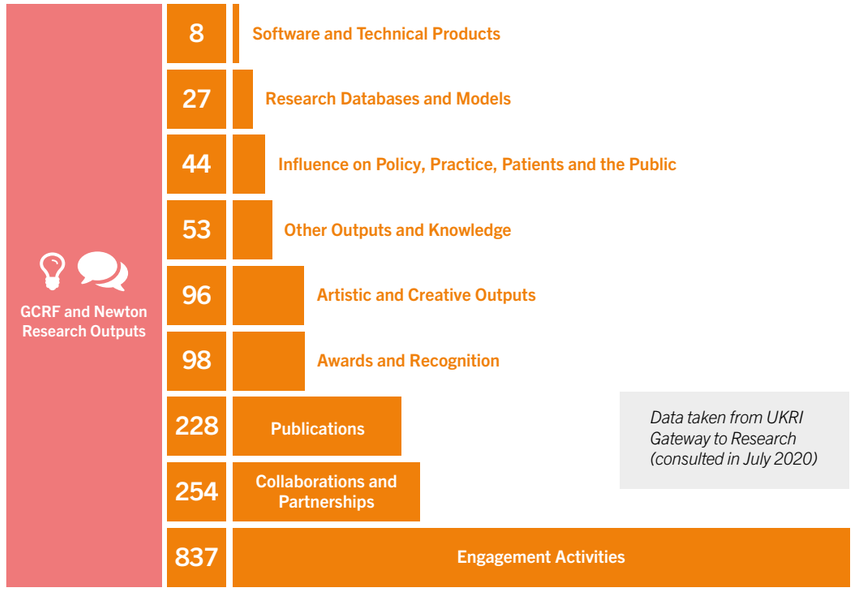
Chapter 3. Successful Practices and Lessons Learnt

A number of cross-cutting issues have emerged from the analysis of the 87 GCRF and Newton funded projects presented and discussed throughout this report. This chapter aims to highlight the particular features of heritage research for tackling global challenges and fostering international sustainable development; looking across projects, disciplines, countries, approaches and methodologies. It also provides an overview and discussion of the key outputs and impacts that these projects—often acknowledged through awards and recognition (e.g. research prizes, invitations as keynote speakers, honorary memberships, etc.)—were able to generate (see Infographic 19). Heritage research outputs have not been limited to the most obvious ones, such as academic publications and the organisation of scientific conferences, but also include creative and artistic outputs; research databases and models; software and technical products; the promotion of participatory and engagement activities; the establishment of North-South and South-South collaborations and partnerships; and influencing policy, planning, and decision making. Overall, heritage research projects funded through the GCRF and Newton have also mobilised additional funding from universities, governments, international organisations (e.g. European Commission, UNESCO), foundations, cultural organisations and academies (e.g. The British Council), for a total amount of £45,830,698 (see Infographic 20). These collaborative efforts have contributed to maximise the research impacts and the implementation of interdisciplinary, inclusive, transformative and long-term developmental approaches. A series of future recommendations are suggested in the final section of this report on the basis of the successful practices and lessons learnt discussed in this chapter.

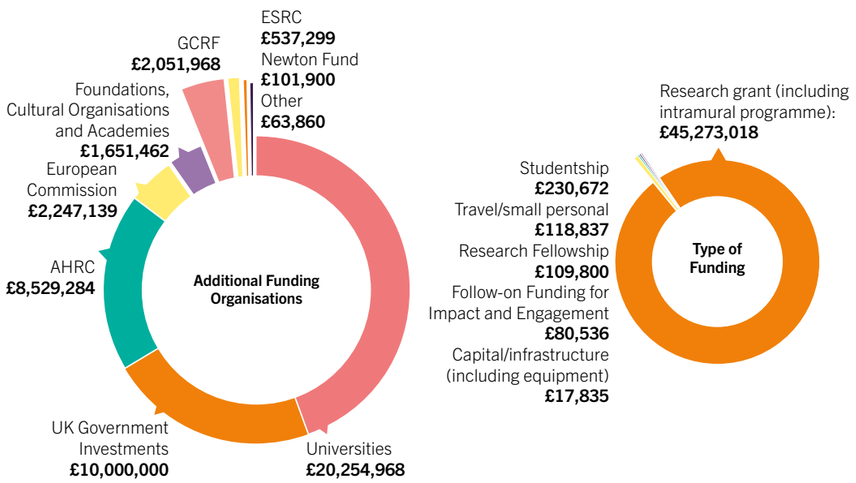
Creative and Artistic Methods and Outputs

This analysis shows the variety of approaches and methodologies that have been employed by GCRF and Newton projects to tackle global challenges and produce innovative knowledge (see Infographic 21). They range from archival, historical and architectural research, record mapping, fieldwork, surveys, and assessments as well as textual, linguistic, and visual analyses to more participatory approaches including workshops, meetings, and focus groups with local

Infographic 19. GCRF and Newton Research Outputs



Infographic 20. Additional Research Funding



communities and other stakeholders; site visits and public walks; interviews, oral history, and storytelling. In addition, artistic and creative exhibitions, festivals, videos and animations, artworks, performances, and other creative outputs (e.g. images, artefacts, creative writing and compositions) have been produced and displayed as part of the projects, for the most part involving a participatory approach. The use of creative and artistic methods, such as visual exhibitions, artefacts and performing arts, has promoted meaningful ways to communicate with community groups and individuals, including the most marginalised, to value alternative and/or uncomfortable histories, to disrupt power dynamics, and to support transformative change. Moreover, creative and art-based methodologies have stimulated an inclusive approach. These creative practices have worked on different levels of active and emotional engagement, to present multiple views and perspectives and to stimulate dialogue across different countries, actors, community groups, and individuals. In this context, the creative process itself has often been as important as the final project output. This co-design and co-creation process with local communities has allowed the research projects to question existing power dynamics and convey local knowledge, meanings, and values associated with cultural heritage in original and innovative ways (e.g. film-making, see Case Study 5). Collaboration has also supported a reciprocal process of knowledge exchange, self-reflexivity and mutual learning.

"Creative design offers a way of unlocking the potential of traditional material cultures by helping ensure they remain relevant and meaningful to contemporary needs". *Prof. Stuart Walker, Lancaster University (ref. 53)*

Furthermore, the section on digitalisation, innovation, and technology in particular, has shown how heritage research projects have been able to combine A&H methodologies with digital technologies, such as BIM, augmented reality, virtual modelling, laser scanning, and GIS modelling in original ways. This combination of different methodologies has produced innovative and alternative approaches as well as practical outputs (software, technical products, research databases and models) that academics, practitioners, policymakers, NGOs, civil society, and other stakeholders can use to improve their

understanding of local heritage and its wider social, economic, and environmental context. These activities have contributed to stimulate communities' engagement and active citizenship through digital heritage and creative experience; to raise general public and policy makers' awareness on the importance of preserving and transmitting local heritage and its values; to generate decolonised and locally-driven knowledge; and to support capacity strengthening and empowerment by providing digital and physical platforms for training and educational programmes with their roots in cultural heritage. Together with the organisation of conferences and symposia, they have also contributed to far-reaching dissemination of the research results.

"Archaeology and heritage can be a neutral space from which to begin conversations and open dialogue". *Dr. Karina Croucher, University of Bradford (ref. 5)*

Interdisciplinary approaches

The multi-faceted nature of heritage—tangible and intangible, natural and cultural—as well as the combined use of diverse methodologies makes GCRF and Newton research a highly interdisciplinary endeavour. The disciplines involved in the research projects encompass those more clearly related to heritage studies (e.g. cultural and museums studies, heritage management, history and archaeology), but also development studies and a plethora of other thematic subject areas, such as animal and food science, gender and sexuality studies, environmental engineering, ethnobotanic, law, democracy and legal studies, computer science, virtual technology, peace studies, and many others (see Infographic 23). This report has demonstrated how the implementation of multidisciplinary approaches have been particularly successful in tackling the social, environmental, cultural, and economic complexity of the global challenges discussed in Chapter 1.

Infographic 21. Heritage Research Methodologies

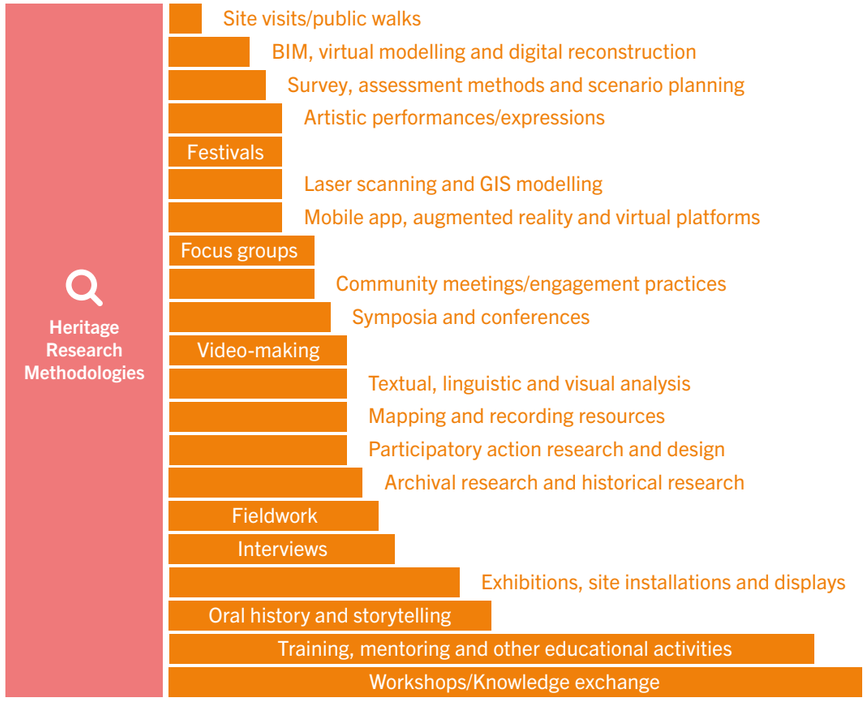
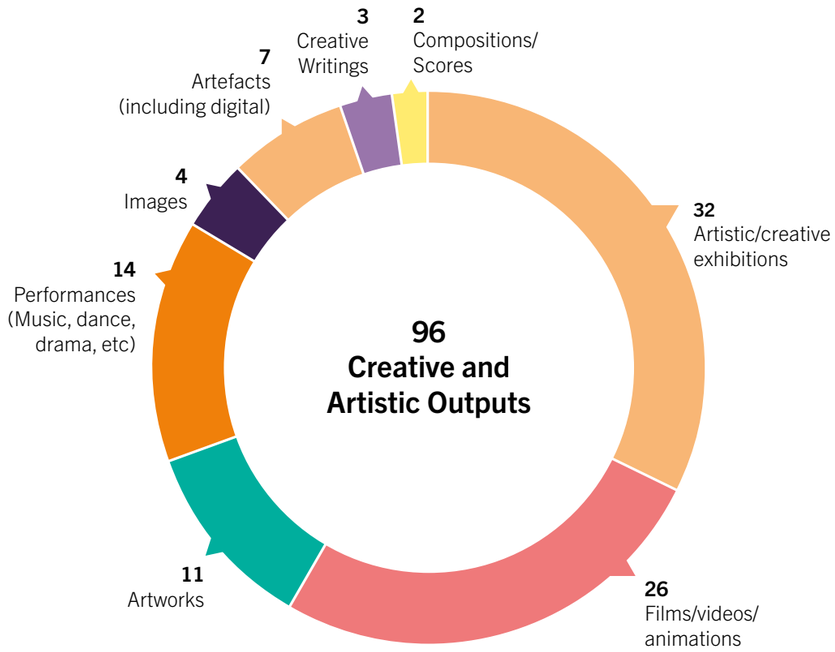


Figure 42. Karachi Partition City publicity image. Project: 'Urban Heritage and the Digital Humanities in India' (ref. 84). Credit: Anitha Balachandran, 2020

This analysis has shown how interdisciplinary research work has allowed a cross-fertilization between disciplines and methodologies, resulting in the design and implementation of innovative approaches to tackle global challenges, putting heritage and human development at their core. Furthermore, the design and implementation of interdisciplinary approaches has also enabled heritage research to promote multi-level and multi-sectoral collaborations between academic and non-academic stakeholders. Nevertheless, interdisciplinarity also faces practical challenges, such the need to find common languages and terminologies across disciplines that may complicate the collaboration and slow down the research work. Moreover, power imbalances still exist between different research disciplines, particularly in terms of funding that may undervalue A&H research work due to perceived limitations about its ability to generate immediate and quantifiable impacts.

Infographic 22. Creative and Artistic Outputs



"One of the most important achievements of the network has been the extent to which it has opened up a range of new research questions that researchers working within specific and defined disciplinary boundaries have not hitherto addressed. (…) Despite the many achievements of the network, there have also been a number of negative results which were not foreseen at the start of the grant. The wide scope of the research pursued by individual members within the network, and the vastly different expectations in terms of publications and other output between different disciplines (…), has meant that no concrete plans for joint and cross-disciplinary research projects have yet emerged from the network. Indeed, in some cases the network has only confirmed that cross-disciplinary work which leads directly to publishable output (in a form which satisfies very different disciplinary and sectoral norms) remains highly challenging". *Prof. Cathy Turner, University of Exeter (ref. 81)*

Infographic 23. Heritage Research Disciplines

Figure 43. Jihad Kafafi and Dr. Yosha Al-Amri scanning a Jehrico skull as part of our digitisation efforts. Project: 'Augmenting Jordanian Heritage' (ref. 4).

Cultural and Place Sensitivity

One of biggest strengths of GCRF and Newton projects is the specific attention they have paid to understanding local heritage, people, places, and contexts, building trust relationships, and providing culturally sensitive approaches and solutions. One of the most successful elements of these projects has been their very long-term engagement and deep understanding of local realities, communities and other stakeholders, brokering and supporting an equitable and ethical exchange. Being conscious of local specificities has allowed projects to better understand nuances of the research encounters, to uncover hidden meanings, and to explore how relationships between organisations work on the ground. It has also reduced cultural, linguistic and communication differences and barriers, to overcome the distrust of local stakeholders and researchers' own Eurocentric preconceptions as well as positively transformed both external and local views, challenging attitudes and perspectives and stimulating local participation. Working with local realities has supported the framing and designing of follow-on research projects

with a high level of local awareness and commitment to the adoption of decolonised approaches. This approach considerably differs from other large-scale and 'top-down' international development projects, which are often carried out within a very short-time frame and conducted very similarly all around the world, without understanding local interests and priorities and without responding to local needs, expectations and aspirations. Establishing meaningful relationships with a place and its communities and building local trust requires long-term engagement with local stakeholders, but it is key to stimulating local custodianship and achieving long-term impactful results. In this context, follow-on funding schemes are pivotal for increasing the quantity and quality of long-lasting research impacts on the ground.

Figure 44. Plural Heritages researcher Dr. Gönül Bozoğlu interviews participant Yetvart Tomasyan about his relationship to the historic neighbourhoods of the ancient Land Walls of Istanbul. Project: Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls (ref. 60). Photograph by Tom Schofield.

Figure 45. Communication materials of 'Our Past, Our Future' and its follow-on project 'Archaeology into Business in Fayan (ABIF)'. Project: 'Our Past, Our Future, All Together in Faynan – OPOF' (ref. 56).

"Two of the project's six researchers were Nepalis; the others were Nepal specialists from a range of disciplinary backgrounds, including heritage studies, history, anthropology, and cultural studies. All of the team speak and read Nepali. They were therefore well versed in the cultural and political context of Nepal's 2015 earthquakes, and could also access and contribute to discussions and debates in the dominant local language. This high level of embeddedness in the local context generated trust, and ensured that the project's research questions were aligned with and informed by concerns on the ground". *Prof. Michael Hutt, SOAS University of London (ref. 3)*

Inclusive and Participatory Research

GCRF and Newton research projects have attempted to move away from a donor-led and top-down approach to a collaborative, bottom-up and grass-roots approach to international development. They have supported local communities and other stakeholders to be active players in a knowledge co-production process to ensure that the research process is also of value to them. In this framework, the use of creative and artistic method and outputs and of digital technologies and social media as well as the promotion of experimental and hands-on experience have played a key role in stimulating engagement, fostering dialogue and meaningful conversations with diverse communities, and reaching out to a wide and non-specialised audience as well as marginalised groups (women, Indigenous People, refugees, displaced people, etc.). They have also generated a sense of cohesion and inclusion while challenging conventional assumptions (see Case Study 3). Working alongside and sharing different perspectives with local communities has resulted in a reciprocal process of transformation and self-reflexivity for researchers and local participants, and in innovative and decolonised research processes and outputs. Engaging local communities in research activities (e.g. through workshops, fieldwork, survey and documentation, interviews, story-telling, etc.) and in processes of heritage preservation and management has supported researchers in broadening their understanding of heritage, looking at it through the lens of local perspectives. In parallel, it also increased local awareness of the importance of preserving heritage over time as well as recognising its value. GCRF and Newton projects have also highlighted how the concept of 'local community' or better 'local communities' is multifaceted and need to be properly interrogated before initiating collaboration on project activities. Communities are not all the same as they have different values, habits, opinions and needs, and may also attach different meanings and values to heritage sites (see Focus 4). It is important to recognise and appreciate the difference between different groups and individuals, and to give voice to the most underrepresented and marginalised, who otherwise might remain excluded.

"Graphic heritage is set to play an accessible and democratising role for all who are concerned with how heritage interpretation plays out across high-cultural heritage and popular-cultural heritage". *Dr. Robert Harland, Loughborough University (ref. 65)*

Figure 46. Young citizens of Shutb village interviewing elderly members of the community. Project: 'Sustainable Solutions towards Heritage Preservation in the Asyut Region, Egypt' (ref. 73). Photograph by Mostafa Naguib.

Communities have generally been pleased to contribute to GCRF and Newton projects, especially when they recognised the value and potential of the project and their active engagement was crucial for the projects' positive outcomes. In this context, it was essential to avoid preformed assumptions and to spend time with local communities to understand

their cultural view of heritage as well as their needs and expectations. Establishing what communities want and need should be at the core of the research project and should be identified from the start. If local communities do not understand the value of participating in the research project, the long-term impact of the project will be diminished. In the projects explored, local contribution to research activities was generally not driven by their desire for funding, even if funding was essential to implement the project. In the majority of cases, local participants are not paid for taking part in research activities and are driven instead by their commitment to transform their existing situation and improve local quality of life. Moreover, it is essential to minimise the sense of 'research fatigue' in local communities regularly visited by research organisations. Where heritage research outcomes are not transformed into direct and short-term local benefits, such as food security, poverty and unemployment reduction, local communities may struggle to appreciate the longer-term benefits for engaging in heritage research. It is important that less tangible benefits are communicated effectively to local communities so that they can take up opportunities to engage in the research process. Researchers also need to take into consideration local communities' needs and expectations from early in the research process and to find mutually rewarding opportunities for local engagement including through learning exchanges, training and advocacy.

"As the archaeological site of Shutb is located in a residential area, it was crucial for the project to ensure local community participation in conversations regarding their heritage and how heritage preservation could foster future development plans of their village without hindering the aspiration of the residents for a better quality of life and improved standards of living. The project was unique in dealing with heritage preservation as a dynamic participatory process where the local community and authorities are not considered just beneficiaries but rather as active agents that play vital roles in its planning and implementation". *Heba Shama, The American University in Cairo (ref. 73)*

Figure 47. Design for Heritage in Practice Workshop. The workshop was organised with the Shanghai International Creative City Think Tank at the UNESCO Creative City (Shanghai) Promotion Office and involved heritage professionals, policymakers, public administrators, creative designers, and artists. Project: 'Repositioning Graphic Heritage' (ref. 65).

The collaboration and partnership with local organisations (e.g. local universities, museums, NGOs, schools, community groups, etc.) rooted in places and communities has been one the most successful aspects of the implementation of heritage research for international development. This has supported the building of meaningful relations of trust and cooperation between local people and external researchers, overcoming possible distrust with regards to the research. At the same time, local organisations have been strengthened and empowered through interactive and collaborative learning processes with the research projects and have been provided with a wide range of materials and perspectives to build on. Moreover, the skills, profile and reputation of local organisations (e.g. *La Nuestra* in Argentina, see Case Study 1) have received recognition at national and international levels by their participation in academic project activities including for example conferences, symposia, workshops and focus groups. Notwithstanding these opportunities, it remains critically important to pay adequate attention to address and reduce possible power imbalances; democratise the research process; and build equitable partnerships between UK institutions and overseas partners and collaborators to achieve positive, long-term outcomes for all involved.

Dissemination and Raising Awareness

GCRF and Newton projects have produced more than two hundred publications to disseminate their research findings and many more are forthcoming (see Annex 3). Publications have taken the form of scientific texts, such as books, book chapters and peer-reviewed articles, but also of non-academic reports and guidelines for targeted stakeholders as well as booklets, local magazines, press releases and other publications accessible to a more general audience (see Case Study 7). Moreover, freely available online resources, such as project websites, blogs and social media outputs, have contributed to dissemination of the research outcomes on a global scale. In addition, 27 research databases and models have been also developed by research projects. The creation of the SWAY Digital Library presented in Case Study 2, for example, is an extraordinary illustration of how an extensive digital database with universally accessible research materials can enhance the scope of research in Nepal and beyond. Other examples include the creation of databases of architectural and historical materials (ref.

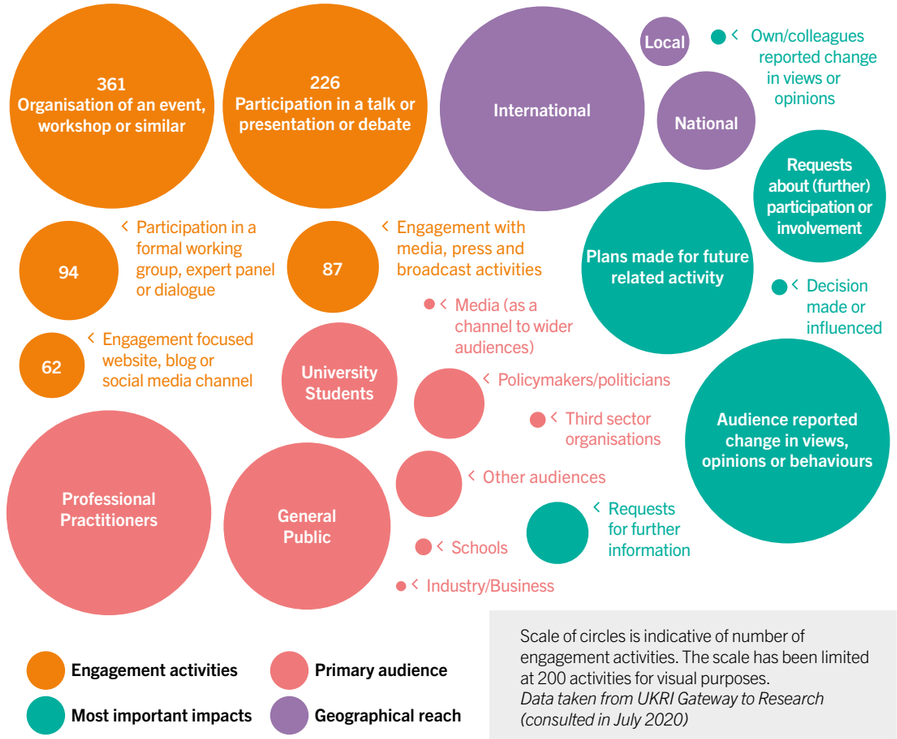
36, 49, 62); national cultural heritage (see Focus 6); oral history recordings (ref. 9, 60); textile traditional motifs and design (ref. 22); bibliographical sources (ref. 67) and best practices (ref. 85); photographs (ref. 75, 78); digital and 3d models (ref. 87 and Focus 3) and GIS databases (ref. 39, 60).

Furthermore, GCRF and Newton projects have also disseminated their findings and increased awareness of local cultures and heritage through international exchanges, workshops, focus groups, educational activities, community heritage days, and the production of diverse forms of creative outputs, including films, exhibitions, music and artistic performances, photographs and exhibitions, among others. The display of these creative outputs—together with the presentation at conferences, symposia, workshops, expert panels and community meetings, as well as participation in media interviews (e.g. in television or at the radio)—has informed and engaged local, national, and international stakeholders. These include professional practitioners, school and university students, policymakers and politicians, third-sector organisations, and industry/businesses, among others. As a result, the projects have generated impact by changing both research colleagues' and audience's views, opinions, or behaviours and by shaping plans for future related activities. Stakeholder interest in project activities has been confirmed by requests for further participation and further information. Such activities have stimulated discussion of the past, local activism, public engagement and resilience and, in some cases, have also influenced policy, planning, and decision-making. Finally, the active engagement of local communities (including children and younger generations) and authorities has increased awareness on heritage assets and values under threat, e.g. from illegal looting (see Case Study 10) or climate change (see Case Study 5), and of the importance of heritage preservation, and sustainable management. This is an essential prerequisite for communities' long-term engagement as active contributors in local custodianship and for the transmission of heritage artefacts and practices to future generations.

Capacity Strengthening and Empowerment

GCRF and Newton projects have contributed to strengthening research capacity through the production of innovative knowledge, models, tools approaches, methodologies, and databases, and by opening up new research questions. Some of the learning has also been included in the design of university curricula and courses, for example informing a Master of Arts on Heritage and Environmental Change (see Case Study 5), or as tailored training on multilingualism and translation in the academic and professional development programmes of UNAM's Medical School (see Focus 21). This will impact the academic development of the next generation of heritage professionals.

Infographic 24. Engagement Activities



Scale of circles is indicative of number of engagement activities. The scale has been limited at 200 activities for visual purposes.
Data taken from UKRI Gateway to Research (consulted in July 2020)

Figure 48. Kachinland Research Centre. Project: 'Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People' (ref. 19). Photograph by Richard Axelby.

Moreover, these projects have also brought together established and senior academics with researchers at different stages of career progression, including postgraduate students and early career researchers. These researchers have strengthened their academic and professional skills on heritage by: receiving funding to conduct research activities (particularly in Network+ projects) as part of GCRF/Newton projects; presenting and discussing their projects in workshops, conferences, and other events organised by the research projects and interacting with international researchers and other stakeholders; receiving specialised training for example on active listening, research protocols and qualitative data collection methods and techniques (see Focus 12) or working as part of multi-disciplinary and multi-national research teams to conduct fieldwork, documentation and ethnographic data gathering, data analysis, etc. The project Rising from the Depths (Case Study 9), for example, has provided scholarships for up to ten PhD students, thus creating a cohort of early career researchers exploring the research topic from various perspectives. Some of them are conducting their PhD studies while working in local institutions and organisations in the Global South (e.g. National

Museums of Kenya). It is likely that their research studies will directly influence and improve current practice in their respective organisations. In this way, research projects have been able to strengthen capacities on conducting heritage research for international development while developing research networks with potential for longevity and multi-national collaboration.

"I am grateful for witnessing partnerships grow in means to support the local needs, national vision, and conservation of heritage in Jordan, while learning from the acquired experience of inspiring people and professional academics. Heritage and community align hand in hand together for a wider impact and a sustainable approach, as projects always have specific timeframes and what remains are the people of the place who will carry on the legacy after any project completion". *Nebras Maslamani, The Council for British Research in the Levant (ref. 56)*

Figure 49. Children are experiencing blue dye. Project: 'Digital Platforms for Craft in the UK and China' (ref. 21). Photograph by Milan Zou.

Figure 50. Jordanian museum and heritage professionals participating in a 10-day training programme at Durham University. Project: 'Learning from Multicultural Amman: Engaging Jordan's Youth' (ref. 50).

Moreover, the heritage research projects have also transferred knowledge and contributed to strengthening the capacities of the general public and of different groups of local stakeholders involved in the projects' activities. The section on inclusive, equitable, and quality education has already revealed how multi-cultural heritage has been used as a catalyst for the provision of training, educational materials, experiential and hands-on learning grounded in local cultures, places, and artefacts. Working in partnerships with local museums, schools, universities, and cultural institutions, sometimes in dialogue with ministerial departments, the projects have: produced educational resources for students and schoolteachers; provided high-quality technical training (e.g. software training) to teachers, museum staff, heritage institutions, NGOs, artists, university

lecturers, and researchers; delivered vocational training to increase employment (particularly in the tourism sector) and the creation of new economic activities; organised capacity building workshops and training with local professionals and community members to increase heritage awareness and stimulate local custodianship. As a result, children, school students, teachers, graduate and post-graduate students, researchers, community members (e.g. women's groups), but also local authorities and policymakers, heritage institutions, museum staff, artisans, NGOs, and other stakeholders have been empowered by taking an active part in the implementation of all these activities and in heritage conservation and management. Though challenging to measure in the short-term, the meaningful and profound impacts generated by all these activities and in taking an active part in projects' co-creation and co-design, are likely to increase the longevity of the research projects' results well beyond their conclusion.

Collaboration, Networks, and Equitable Partnerships

The interdisciplinary aspects related to heritage research make it a strategic field for stimulating collaboration, exchange, networks, and partnerships between multi-level and cross-sectoral actors. In total, the research projects have established more than 250 partnerships and collaborations within and beyond academia, including research institutes, universities, international, national and local organisations and authorities, political actors, NGOs, charities, schools, museums, and other cultural institutions. Partnerships and collaborations have also been extended to companies (e.g. Hi-Tech Industry and creative industries) and development agencies as well as community groups, artists, activists, and professionals all around the world. This report has demonstrated how direct engagement, collaboration, and partnership with these stakeholders is essential to promoting sustainable (cultural and natural) heritage conservation and management models, balancing the needs of heritage preservation with those of socio-economic development. In some cases, this was the first time that an academic project had approached local organisations and supported co-design and co-creation with overseas partners. Moreover, the organisation of international networking events has created interconnections and exchanges of knowledge, ideas, and perspectives across

continents that may have had limited prior contact, facilitating North-South, South-South, and South-North learning (see for example Focus 20).

Working in collaboration and partnership between UK institutions and overseas partners with different research strengths has been pivotal to the success of GCRF and Newton projects. In coordinating such projects, UK research institutions have provided human, economic and technical resources, and expertise to co-design innovative activities in LCDs and LMICs that would otherwise have been impossible to realise. They have facilitated knowledge transfer and expertise (e.g. digital cultural heritage, digital humanities, performance studies, experiential education or interactive museums and learning activities), and novel interdisciplinary approaches to heritage research. Furthermore, they have facilitated networking activities across countries from all over the world. Local partners, for their part, have contributed to the project outcomes and supported engagement with local communities, authorities, and other stakeholders. They have been intimately involved in, and have sometimes led, both the research itself and the operationalisation of projects' activities. Their local knowledge, connections, experience, as well as their responsiveness on the ground have been essential to integrating foreign researchers, countering unconscious bias, and generating lasting impact. The exchange of research approaches through collaboration between UK academics and overseas partners has supported the creation of new working perspectives, thereby enhancing the profile of local organisations as well as increasing their human, technical, and economic capacity for follow-on activities. This in turn has improved the long-term sustainability of the GCRF and Newton projects themselves. Projects have built or expanded their existing networks and have strengthened working relationships, facilitating co-publication and dissemination of the research findings, collaborative future grant applications, and long-term international research partnerships.

"World Heritage sites offer enormous potential as places where we can develop novel local partnerships to help tackle global challenges. They offer ideal settings where communities, administrators, and businesses, the visiting public, and scientific research can become engaged in mutually-supportive actions. The preservation of cultural and natural heritage, conservation, sustainable development, and ecotourism are all themes that can feature prominently, provided there is ongoing dialogue between partners and the identification of compatible goals. How local traditions, values and concerns are being presented in the spot-light of World Heritage; partnership rather than competition with industry; and the need to extend research contributions across the traditional boundaries between scientific disciplines are among the areas where that dialogue can be developed further". *Dr. Ryan Rabett, Queen's University Belfast (ref. 39)*

"When facing many complex global challenges it is important that we recognise and respect the multiple ways in which people attach meaning to cultural heritage". *Dr. Aylin Orbaşlı, Oxford Brookes University (ref. 13)*

Fostering a shared agenda, values, ethics, and attitudes are a fundamental aspect of working with local partners to build long-term trust. Equal partnerships need to be built between UK institutions and overseas partners, but also between academic and non-academic collaborators. In this context, it is important to simplify the administrative and financial procedures for the establishment of these kinds of partnership (e.g. transfer of funds, due diligence process, risk and safeguarding, document translation, etc.) to maintain trust between UK and overseas partners, to increase flexibility, and facilitate the

Figure 51. A team of researchers from Samara University, Ethiopia. Project: 'Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People' (ref. 19).

Figure 52. 'MaDiH Assets Identification and Requirements Elicitation' workshop audience and team, 29 October 2019. Project: 'MaDiH: Mapping Digital Heritage in Jordan' (ref. 54). Photograph by Khadija Al-Faqeer.

research work. Moreover, it is essential to overcome existing power imbalances that may emerge from a research agenda set by UK funding bodies with limited consultation with regional partners in advance, as well as a financial and research management directed by Northern institutions and the sole use of English for official communications and formal procedures. Furthermore, co-design and co-creation of research projects should be encouraged at the very early stages of research project development, to make sure that local needs and expectations as well as national strategic priorities are incorporated from the start. However, this is often challenging to achieve due to the short timeframes available for the development of grant applications for international and collaborative research, especially when no prior research networks have been established and no North-South and South-South research collaboration has been conducted.

Influencing Policy, Planning, and Decision-Making

GCRF and Newton projects have demonstrated their ability to influence policy, planning, and decision-making. Such policy areas are not limited to culture, heritage, and museums, but include also communities and social services, education, creative economy, democratic and legal processes, leisure activities, security, environment, healthcare, and agriculture, among others. The projects have developed tools and data analysis to support the decision-making process (such as outlining future transformation scenarios, recovery models, data spatial location and 3D scenes, production of historical and long-term archaeological evidence, etc.) and the production of reports, recommendations, guidelines, evidence-based strategies, action-plans, etc. Examples include: sustainable heritage conservation and urban planning strategies (see Focus 3, Focus 5); heritage management and integrated plans to balance heritage preservation with infrastructure and modern developments (see Case Study 10); post-earthquake reconstruction plans (see Focus 17); adaptation to climate change; alternative energy production (see Focus 15); public service delivery (e.g. health and social services); improvement of museum standards; and stronger and more resilient institutions that can foster equality and inclusion (see Case Study 1).

The involvement of different stakeholders as well as the dissemination of research findings has influenced international, national, and local agendas, policies, and practice. Research teams have also shared their knowledge, expertise, and research findings in advisory committees, expert groups, and national consultations. Some of the studies' findings have been presented to high-level country representatives and at UN events (see Case Study 9), cited in policy documents, or as evidence to a government review. Working relationships have been also established with local authorities and international organisations, to incorporate the methods tested in these projects in future program delivery initiatives (see Case Study 3).

Infographic 25. Research Influence on Policy, Practice, and the Public

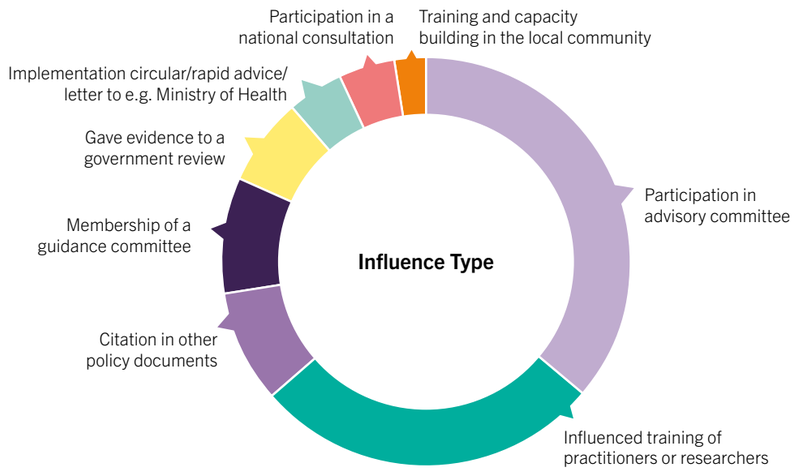


Figure 53. Dr. Libby Chan, Assistant Director of the Hong Kong Maritime Museum, speaking at one of the China Ports network workshops. Project: 'China Ports: History, Heritage and Development' (ref. 11).

The Way Forward

The findings of this report have provided evidence of how heritage and heritage research can foster innovative, interdisciplinary, inclusive, and transformative sustainable development and the achievement of the SDGs in ODA countries and beyond. However, challenges and research gaps still need to be overcome. The COVID-19 pandemic reinforces the imperative to rethink current approaches and to transform our development models to be more integrated, human-centred, and sustainable. The report's mixed method analysis of GCRF and Newton funded projects and interviews with project participants have shaped a collaborative learning process and led to the recommendations and future research areas highlighted below. These are not exhaustive but are intended to stimulate further thinking and action. We hope that the outcomes from this report will be useful for a wide audience of stakeholders, including UK and overseas academics and practitioners, funding bodies, governments and decision-makers, development agencies, and NGOs.

Recommendations

Heritage Research, Global Challenges, and the SDGs

- Mobilise heritage and heritage research to address global challenges and foster a sustainable future rather than simply view heritage as an element to be protected (although this still remains a necessary precondition).
- Recognise and raise awareness of heritage and heritage research as enablers and drivers for achieving the SDGs.
- Align heritage research to the SDGs, to encourage public and multi-sectoral support and to mobilise financial, technical, and human resources involving different actors sharing the goal of sustainable development.

Creative and Artistic Methods and Outputs

- Use creative and artistic methods (e.g. visual exhibitions, video-making, storytelling

and performing arts) to communicate with diverse audiences, especially with the most marginalised ones; to present multiple views and perspectives, and to stimulate dialogue through shared heritage; to value alternative and/or uncomfortable histories; to disrupt power dynamics; and to support transformative change.

Interdisciplinary and Cross-Sectoral Approaches

- Promote interdisciplinary research, to bring different disciplines and methodologies to bear on the complexity and interdependencies involved in heritage research for sustainable development, and to encourage and innovative research outputs and new kinds of practical action.
- Incentivise pre-project workshops to develop multi-disciplinary working practices and collaborative grant applications.
- Encourage public-private and multi-sectoral collaborations and partnerships in heritage research projects—e.g. between research institutions, Hi-Tech industry, social enterprises, start-ups and Small and Medium Enterprises (SMEs)—to enable a better integration of research and practice.

Cultural and Place Sensitivity

- Encourage the implementation of culturally sensitive approaches and solutions by supporting research projects with a high level of local awareness and a decolonised approach.
- Support the establishment of meaningful relationships through long-term exchanges, the engagement of local stakeholders and the building local trust through longer funding cycles, follow-on funding streams, and research no-cost extensions.

Inclusive, Participatory, and Decolonised Research

- Support locally-led, bottom-up, and grass-roots approaches to international development and involve communities at the very early stages of the design and funding application process to incorporate local needs and expectations in research

projects.
- Recognise and appreciate the difference between different communities, groups and individuals, and give voice to the most marginalised.
- Support the decolonization and indigenization of heritage research and practice through co-design of research projects and co-production of research activities with local communities, Indigenous Peoples and other local stakeholders.
- Support the use of creative and artistic methods and outputs, digital technologies, and social media well as opportunities for hands-on experience to stimulate engagement, dialogue, and meaningful conversations with diverse communities that are accessible to a wide and non-specialised audience as well as marginalised groups (women, Indigenous Peoples, refugees, displaced people, etc.).
- When conducting heritage research with local communities, spend time with them to understand their heritage and values as well as their needs and expectations and avoid ‘outsider’ assumptions. Moreover, minimise contributing to ‘research fatigue’, often affecting local communities regularly visited by research agencies, and find mutually rewarding opportunities for local engagement including through learning exchanges, training and advocacy.

Far-Reaching Dissemination, and Awareness Raising

- Incentivise the availability of research findings to wider audiences through freely available project publications (open-source academic publications, databases and other resources, such as reports, guidelines, booklets, local magazines, press release, etc.) and online resources, e.g. project websites, blogs and social media outputs.
- Raise awareness among the general public and policymakers of the importance of preserving and transmitting local heritage through international exchanges, workshops, focus groups, educational activities, community groups and the production and display of diverse forms of creative outputs, including films, exhibitions, music and artistic performances, photographs and exhibitions, etc.

Capacity Strengthening and Empowerment

- Encourage collaboration and exchange between senior academics and researchers at different stages of career progression, including postgraduate students and early career researchers. Support early career researchers though research funding, specialised training and inclusion into multi-disciplinary and multi-national heritage research teams.
- Support capacity strengthening and empowerment and encourage local heritage custodianship through the provision of training, educational materials, experiential and hands-on learning experience based on local cultures, places and artefacts. Provide digital and physical platforms for training and educational programmes in cultural heritage.

Collaboration, Networks, and Equitable Partnerships

- Establish collaborations, exchanges, networks, and partnerships between multi-level and cross-sectoral actors within and beyond academia to bridge divergent interests and to promote heritage conservation and management models, balancing the needs of heritage preservation with those of socio-economic development. In particular, increase and strengthen collaboration between research institutes and universities with international, national and local organisations and authorities, companies (e.g. Hi-Tech industry and creative industries) and development agencies, but also with NGOs, charities, schools, museums and other cultural institutions, community groups, artists, activists and practitioners all around the world.
- Support the mobilisation of different funding resources to create and/or strengthen the heritage research network and maximise the research impacts.
- Incentivise the organisation of international networking events to create interconnections and exchanges of knowledge, ideas, and perspectives across countries and continents that have limited contact, and to promote North-South, South-South and South-North mutual learning.
- Reduce power imbalances in research design and implementation by supporting equitable budgets, research and financial management between UK institutions and overseas partners;
- Support the engagement of global researchers in design and discussion prior to the submission of funding applications, create real or virtual platforms to enable this process and allow a sufficient time to build up the partnership, preferably long before the starting of the formal funding application process.

Influencing Policy, Planning, and Decision-Making

- Use heritage research to inform development policies, planning and decision-making.
- Involve different kind of stakeholders, including policymakers, national and local authority officials, UN agencies, NGOs, and practitioners in the design and development of project activities and align the research project to local and national priorities.
- Share the research results with targeted stakeholders through reports, recommendations and guidelines, presentations, workshops, focus groups, participation in advisory committee and national consultations, but also through media interviews and press releases to influence international, national and local agendas, policies and practice.

Future Research Areas

Heritage and the SDGs

- How can heritage research be better aligned to the SDGs? How can we better connect heritage research and practice to operationalise the SDGs? How can heritage research and a gradual shift toward non-western understandings of heritage better shape the future international development agenda?

Scalability and Replicability

- How can heritage research approaches, solutions, and models be scaled and replicated in different contexts, while respecting local and cultural differences?

Heritage and Evaluation

- How can the quantitative and qualitative impacts of heritage research for sustainable development be better evaluated to incorporate the complexity involved?

Heritage and Inclusive Growth

- How can we develop more inclusive and sustainable economic models, taking into account people's spiritual fulfilment, happiness, sense of solidarity and many other Quality of Life aspects? What role heritage, arts, and creativity can play here?

Heritage and Food Security

- How can heritage and food cultures address global poverty? How can heritage be explored and used to re-think (current) practices around crops, agriculture and food production?

Heritage and Education

- How can creative and artistic methodologies be translated into formal and informal education, especially in conflict and post-conflict societies?

Heritage, Policy, and Active Citizenship

- How can heritage and creative methods stimulate civic participation and engagement? How can heritage and heritage research affect transitional justice policy, stability and decision-making?

Heritage, Innovation, and Technology

- How does technology lead to marginalisation, and what is the impact of social media on cultural alienation? How can heritage and technology and heritage be used in psychological support programming? How is it possible to foster alternative forms of innovation and sustainability through continuity, conservation, repair and maintenance?

Heritage and Climate Change

- How can we shift research investigations from the protection of heritage against climate change to considering the potential for heritage to tackling climate change and its impacts? How can we use heritage as a resource to inform climate change mitigation strategies?

Heritage and Environmental Sustainability

- How can heritage and heritage research contribute to responsible conservation and production, the management of terrestrial and marine environmental resources, and the promotion of clean water, sanitation and energy efficiency? How can traditional knowledge and local practices be valued, acknowledged and embedded into environmental strategies and applied to future management?

Bridging the Nature/Culture Divide

- How can we better connect social and cultural issues to environmental concerns? How is possible to bridge the nature/culture divide, to strengthen the human/nature relationship and to build social and cultural resilience in the context of climate change and natural disasters?

Heritage and Gender Equality

- How can gender equality and social inclusion be incorporated as a cross-cutting theme across heritage research areas? How can heritage research on gender consider also transgender and non-gender identities, especially in conservative countries, and not only the binary division between men and women?

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Annexes

Annex 1. List of Heritage Research Projects

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
1	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*	University of Sheffield	David Wood	Silvana Vilodre Goellner and Verónica Moreira	La Nuestra Fútbol Feminista (Argentina) and the Museu do Futebol in São Paulo (Brazil)	AHRC-GCRF	£49.881,00	Dec 2017 – Apr 2021	Brazil, Argentina, Colombia
2	*A Multi-Isotope Base Map for Jordan: a Tool for Re-examining Movement and Community in the Past*	Durham University	Graham Philip	Khaled Shenwan Al-Bashaireh, Abdulla Al-Shorman and Janet Montgomery	/	Newton	£200.405,00	Feb 2019 – Jan 2021	Jordan
3	*After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*	School of Oriental and African Studies (University of London)	Michael Hutt	Stefanie Lotter and Mark Liechty	Social Science Baha (Nepal) and Martin Chautari (Nepal)	AHRC-GCRF	£576.419,00	Feb 2017 – Mar 2020	Nepal
4	*Augmenting Jordanian Heritage*	University of Bradford	Randolph Donahue and Andrew Wilson	Adrian Evans	Council for British Research in the Levant (UK), Ministry of Tourism and Antiquities (Jordan) and Historic Environment Scotland (UK)	AHRC-GCRF	£205.955,00	Nov 2016 – Oct 2019	Jordan
5	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*	University of Bradford	Adrian Evans	Karina Croucher, Owen Greene and Andrew Wilson	Jordan Heritage, Southern Al-Azraq Women Association and Mercy Corps Jordan	AHRC-GCRF	£84.298,00	Feb 2019 – Sep 2021	Jordan
6	*Building Transdisciplinary Partnerships for Exploring the impact of Population Displacement on Nutrition Interventions*	Queen Mary, University of London	Tim Brown	Andrew Prendergast and Kavita Datta	Zvitambo Institute for Maternal & Child Health (Zimbabwe)	AHRC-GCRF	£180.359,00	Dec 2019 – Jun 2021	Zimbabwe
7	*Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage and Subsurface Heritage Protection Protocols in Kathmandu*	Durham University	Robin Coningham	Ian Simpson	Government of Nepal, Government of Sri Lanka, National Museum of Myanmar and ICOMOS Myanmar	AHRC-GCRF	£74.717,00	Oct 2016 – Sep 2017	Nepal

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
8	*Centre for Digital Copyright and Intellectual Property Research in China*	University of Nottingham	Mike George, Maiken Umbach and Julie T Sanders	/	Ningbo Government (China)	Newton	£505.291,00	Dec 2014 – Jun 2017	China
9	*Changing Farming Lives in South India, Past and Present*	Open University	Sandip Hazareesingh	/	Green Foundation (India)	AHRC-GCRF	£48.328,00	Nov 2017 – Jan 2019	India
10	*Changing Food Systems in Kenya and Malawi*	Newcastle university	Alex Hughes	Alister Munthali, Emma Jane Roe, Abdhalah Kasiira Ziraba and Megan Vaughan	Ministry of Health Malawi, International Livestock Research Institute (Kenya) and Food Standards Agency (UK)	AHRC-GCRF	£188.793,00	Dec 2019 – Jun 2021	Kenya, Malawi, UK
11	*China Ports: History, Heritage and Development*	University of Nottingham	Jeremy Taylor	Jon Henderson	Hong Kong Maritime Museum (China) and China Port Museum	AHRC-GCRF	£35.973,00	Nov 2016 – May 2018	China
12	*Co-production Networks for Community Heritage in Tanzania (CONCH)*	University of York	Stephanie Wynne-Jones	Elinaza Mjema and Paul Lane	University of Dar es Salaam (Tanzania), Ministry of Natural Resources & Tourism (Tanzania), UZIKWASA (Tanzania) and On-Site Archaeology Ltd (UK)	AHRC-GCRF	£48.414,00	Oct 2017 – Sep 2019	Swahili coast, Kenya, Tanzania
13	*Community-Led Heritage Regeneration in India*	Oxford Brookes University	Aylin Orbasli	Priyaleen Singh	School of Planning and Architecture, Delhi (India)	Newton	£24.520,00	Dec 2015 – Jul 2016	India
14	*Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan*	University of Plymouth	Haia Al-Dajani	Geoff Wilson and Marta Rabikowska	TIRAZ and King Hussein Foundation (Jordan)	ESRC-GCRF	£237.439,00	Nov 2016 – Oct 2018	Jordan
15	*Craft China: (Re)making ethnic Heritage in China's Creative Economy*	University College London	Beverley Butler	David William Francis (Researcher)	Chinese National Museum of Ethnology	Newton	£202.340,00	Nov 2018 – Oct 2020	China
16	*Cultural Heritage in Landscape: Planning for Development in Turkey*	Newcastle University	Sam Turner	Ebru Ersoy, Nurdan Erdogan, Tevfik Emre Serifoglu, Engin Nurlu, Gunder Varinloglu, Mark Philip Jackson and Francesco Carrer (Researcher)	Ege University (Turkey)	Newton	£240.174,00	Sep 2016 – Sep 2019	Turkey

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
17	*Cultures of Expertise: Academics in Exile and their Role in the Future Food Security Agenda for Syria (SyrianFoodFutures)*	University of Edinburgh	Lisa Boden	Suk-Jun Kim, Thomas James Parkinson and Clara Calia	Council for Assisting Refugee Academics (UK)	AHRC-GCRF	£170.734,00	Dec 2019 – Nov 2020	Syria, Turkey, Jordan, Lebanon, UK
18	*Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies*	King's College London	Jelke Boesten	Helen Scanlon	/	AHRC-GCRF	£48.535,00	Nov 2016 – Oct 2018	South Africa, Peru
19	*Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People*	School of Oriental and African Studies (University of London)	Emma Crewe	Niraja Gopal Jayal, Cristina Leston-Bandeira, Mandy Joanne Sadan and Ruth Fox	Enlightened Myanmar Research Foundation, Forum for Social Studies (Ethiopia) and Setaweet (Ethiopia)	AHRC-GCRF	£1.843.004,00	Oct 2017 – Sep 2020	Ethiopia, Myanmar
20	*Dhiban: Valuing Sites through Valuable Stories*	University of Liverpool	Bruce Routledge	Olwen Purdue, Neil Sadler, Soumyen Bandyopadhyay and Sue-Ann Harding	Hashemite University (Jordan), Department of Antiquities (Jordan) and British Institute Amman (Jordan)	Newton	£202.283,00	Feb 2019 – Jan 2021	Jordan
21	*Digital Platforms for Craft in the UK and China*	Queen Mary University of London	Nicholas Bryan-Kinns	/	Hunan University (China)	Newton	£193.050,00	Feb 2019 – Sep 2020	UK, China
22	*Digital Threads: Towards Personalised Craft Production in Malay Cottage Industries*	Lancaster University	Corina Sas	Mohd Sazili Shahibi, Nigel Davies, Zoe Frances Lambert, Wan Satirah Wan Mohd Saman and Masitah Ahmad	University College London, Project Provenance Ltd (UK), Kraftangan Malaysia Cawangan Terengganu, Malaysian Handicraft Development Corporation, Universiti Teknologi MARA System (Malaysia) and University of Edinburgh (UK)	Newton	£120.730,00	Feb 2017 – Feb 2019	Malaysia
23	*Digital Urbanism and Diasporas: Walking the Cultural Heritage of Calcutta's Riverfront*	University of Nottingham	Michele Clarke	Maiken Umbach and Sumana Bandyopadhyay	/	AHRC-GCRF	£36.290,00	Dec 2019 – Aug 2020	India

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
24	*'Disaster Passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters*	University of East Anglia	Jennifer Barclay	Maria Teresa Armijos Burneo and Wendy Jayne McMahon	Made Design Agency, British Red Cross (UK), Montserrat Volcano Observatory (MVO) (Montserrat), Seismic Research Center (University of the West Indies, Trinidad & Tobago), Overseas Development Institute (UK), Rocksolid Graphics and Print (UK) and Output Arts (UK)	AHRC-GCRF	£81.767,00	Jan 2019 – Jan 2021	Monserrat
25	*Discovering WF16: Building Engagement with Neolithic Archaeology as Pathway to Economic Development in Southern Jordan*	University of Reading	Steven Mithen	/	Ministry of Tourism and Antiquities (Jordan), Council for British Research in the Levant, and Eco Hotels	AHRC-GCRF	£80.636,00	Nov 2016 – Mar 2018	Jordan
26	*Dominica as a Centre of Excellence for the Preservation and Celebration of the Creole Culture through Language, the Arts and its Indigenous Kalinagos*	University of Bedfordshire	Violet Cuffy	Jane Carr	Committee for the Study of Creole (Dominican Republic)	AHRC-GCRF	£53.427,00	Jan 2018 – Dec 2019	Dominica
27	*Egypt's Living Heritage: Community Engagement in Re-Creating the Past*	University of Kent	Caroline Rooney	Julia Borossa	Institute of Contemporary Arts (UK) and the French University in Egypt	Newton	£31.273,00	Feb 2016 – Apr 2017	Egypt
28	*Enduring Connections*	Bath Spa University	Sara Penrhyn Jones	Bryony Onciul and Anna Woodham	National Trust (UK), Museum of World Culture (Sweden), International Union for Conservation of Nature (IUCN) (Switzerland)	AHRC-GCRF	£79.961,00	Nov 2016 – Apr 2018	Kiribati
29	*Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat*	University of East Anglia	Wendy Jayne McMahon	David Pyle and Jennifer Barclay	University of the West Indies (Jamaica), Norwich Castle Museum and Art Gallery (UK) and Montserrat Volcano Observatory (Montserrat)	AHRC-GCRF	£80.076,00	Nov 2016 – May 2018	St Vincent, Monserrat

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
30	*Fiji's Artistic Heritage: Impact and Engagement in Fiji*	University of East Anglia	Steven Hooper	Karen Jacobs	Mundy Cruising (UK), Fiji National University, Tourism Fiji, Veiqia Project (Fiji), National Maritime Museum (UK), Horniman Museum and Gardens (UK), Government of Fiji, The Royal Collection Trust (UK), iTaukei Trust Fund Board (Fiji), Los Angeles County Museum of Art, University of Oxford (UK), Fiji Museum and University of Cambridge (UK)	AHRC-GCRF	£77.176,00	Oct 2016 – Oct 2017	Fiji
31	*Fishing and Farming in the Desert? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change in Sechura, Peru*	University of St Andrews	Nina Laurie	Andrea Charles Henderson	Foundation for Agrarian Development (Peru), Benefits Association PRISMA (Peru), Centre for Research and Promotion of Farmers-CIPCA (Bolivia), United Oceans S.A.C. (Peru) and The University of Piura (Peru)	AHRC-GCRF	£174.052,00	Dec 2019 – May 2021	Peru
32	*Following the Wires: Sensing Socio-Material Practices of Everyday Electricity Supply in Post-conflict Greater Beirut*	Brunel University London	Daniele Rugo	Dana Abi Ghanem and Maria Kastrinou	Centre for Lebanese Studies – Lebanese American University, Fighters for Peace	AHRC-GCRF	£77.369,00	Sep 2016 – Jun 2018	Lebanon
33	*Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region*	University of Bristol	Jessica Paddock	Tomaso Ferrando, Catalina Toro Perez and Patricia Northover	Tierra del Caño Martín Peña Trust (Puerto Rico), Library of African and Indigenous Study (Belize), Raizal Youth Organization (Colombia), Bernard Lodge Farmers Group (Jamaica) and Sir McChesney George Secondary School (Antigua and Barbuda)	AHRC-GCRF	£178.154,00	Jan 2020 – Dec 2021	Greater Caribbean Region (Antigua and Barbuda, Belize, Archipelago de San Andres - Colombia, Jamaica, Puerto Rico)
34	*Forgotten Food: Culinary Memory, Local Heritage and Lost Agricultural Varieties in India*	University of Sheffield	Siobhan Lambert-Hurley	Duncan Cameron, Saumya Gupta and Claire Chambers	Rampur Raza Library (India), City Food Research Group, Toronto University at Scarborough (Canada)	AHRC-GCRF	£165.879,00	Nov 2019 – Oct 2021	India

Ref.	*Project*	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
35	*Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia*	University of Nottingham	Naomi Sykes	Olivier Hanotte, Richard Mark Thomas, Greger Larson and Garry Marvin; Holly Miller and Melanie Ramasawmy (Researchers)	National Museum of Ethiopia and the International Livestock Research Institute (Kenya)	AHRC-GCRF	£224.961,00	Nov 2016 – Jun 2017	Ethiopia
36	*HARVEST: High-Mountain Asia – Building Resilience to Water Variability Using Experiments, Surveys and Accounts of Tradition*	University of Leeds	Duncan Quincey	Lee Eric Brown, Jonathan Lovett, Barbara Elvy Evans, Timothy Daniel Haines and Laura Ann Bates	Tribhuvan University of Nepal, International Centre for Integrated Mountain Development (Nepal), Kathmandu University (Nepal) and Practical Action (UK)	NERC-GCRF	£152.225,00	Nov 2016 – Nov 2017	Nepal
37	*Heritage Matters: Culture and Development in the Pacific*	University of Cambridge	Nicholas Thomas	/	Kiribati Cultural Centre and the Solomon Islands National Museum	AHRC-GCRF	£80.423,00	Nov 2016 – Apr 2018	Kiribati
38	*Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating*	University of Exeter	Cornelia Guell	Henrice Altink, Matthew Smith, Ishtar Govia, Karyn Morrissey and Nigel Christopher Unwin	University of the West Indies (Jamaica), State University of Haiti, University of York, University of Cambridge, Healthy Caribbean Coalition	MRC-GCRF	£185.735,00	Mar 2018 – Sep 2019	Haiti, Jamaica
39	*Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)*	Queen's University Belfast	Ryan John Rabett	Fiona Coward and Tran Tan Van	Bournemouth University, Vietnam Institute of Geoscience & Mineral Resources Tràng An Management Board (Vietnam), University of Cambridge	AHRC-GCRF	£741.415,00	Jul 2016 – Dec 2020	Vietnam
40	*Humanities for Resilience*	University of Birmingham	Katherine Brown	Sara Fregonese	Volunteer Missionary Movement (UK) and Beit Beirut (Lebanon)	AHRC-GCRF	£47.986,00	Jan 2018 – Apr 2020	UK, Zambia, Pakistan, Lebanon

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
41	*Idioms of Distress, Resilience and Well-Being: Enhancing Understanding about Mental Health in Multilingual Contexts*	University of Glasgow	Alison Phipps	Richard James Fay, Nazmi Al-Masri, Rosco Kasujja, Kofi Agyekum, Ross George White and Kofi Anyidoho	University of Edinburgh, Great Zimbabwe University, University of Ghana, IGNITE Youth Theatre (USA), University of Cape Town (South Africa), Keele University (UK), Noyam African Dance Institute (Ghana), University of Liverpool (UK), University of Waikato (New Zealand), Makerere University (Uganda), Islamic University of Gaza (Occupied Palestinian Territories), University of Manchester (UK), University of Otago (New Zealand), and Solas Festival (UK)	AHRC-GCRF	£209.464,00	Nov 2016 – Feb 2018	Ghana, Gaza, Uganda, Zimbabwe
42	*Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China*	University of Cambridge	Richard Fraser	Mark John Elliott	National Museum of Ethnology (China)	AHRC-GCRF	£194.435,00	Feb 2017 – Jan 2019	China
43	*Imagining Futures through Un/Archived Pasts – Development Proposal*	University of Exeter	Elena Isayev	Howayda Al-Harithy, Peter Bryson Campbell, Nancy Alexander Rushohora, Mick Finch, Elena Fiddian-Qasmiyeh and Kodzo Gavua	Syrbanism (Germany/Austria) and The British Museum	AHRC-GCRF	£53.641,00	Jul 2019 – Jun 2020	Tanzania, Lebanon
44	*Indicators for Informal Learning: a Mobile Heritage Network for Conflict-Affected Communities in Uganda*	University of Bath	Lizzi Milligan	Nelson Adebo Abiti and Kate Emily Moles	/	AHRC-GCRF	£50.921,00	Jan 2019 – Dec 2019	Uganda, East Africa
45	*Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience*	International Institute for Environment and Development	Krystyna Swiderska	Chemuku Wekesa, Ajay Rastogi, Yiching Song and Philippa Ryan	Farmer Seed Network China (Kenya), Forestry Research Institute, Lok Chetna Manch (India) and Royal Botanic Gardens, Kew (UK)	AHRC-GCRF	£174.853,00	Oct 2019 – Sept 2021	Kenya, India, China

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
46	*Integrating Ecological and Cultural Histories to Inform Sustainable and Equitable Futures for the Colombian Páramos*	University of York	Piran White	Henrice Altink, Rory Robert O' Brryen, Colin Beale, Helen Louise Cowie, Julia Touza-Montero, Jane Katharine Hill and Sabine Marie Clarke	Del Rosario University (Colombia), Central Bank of Colombia, Royal Botanic Garden Edinburgh (UK), Alexander von Humboldt Biological Resources Research Institute (Colombia), University of the Andes (Colombia) and The Nature Conservancy (United States)	Newton	£1.131.577,00	Aug 2018 – Jul 2021	Colombia
47	*Interdisciplinary Approach for the Management and Conservation of UNESCO World Heritage Site of Historic Cairo. Application to Al-Ashraf Street*	Imperial College London	Ahmed Elghazouli	Adrian Butler, Sherif Mourad, Christopher Cheeseman and Ahmed Elyamani	Megawra (Egypt)	Newton	£202.590,00	Nov 2018 – Nov 2021	Egypt
48	*IT INDIAN HERITAGE PLATFORM: Enhancing Cultural Resilience in India by Applying Digital Technologies to the Indian Tangible and Intangible Heritage*	University of Salford	Chika Udeaja	Dilipkumar Arvindkumar Patel, Claudia Trillo, Kwasi Gyau Baffour Awuah and Kumar Neeraj Jha	/	Newton	£148.278,00	Feb 2018 – Feb 2020	India
49	*LABYRINTH: Conservation, Analysis and Virtual Reconstruction of the Archaeological Site of Hawara Pyramid and Labyrinth (El Fayoum)*	Nottingham Trent University	Mohamed Gamal Abdelmonem	Barbara Krystyna Pierscionek, Abbas Mohamed Ali, Mohamed Nabil ElGabry, Antony John Pidduck, Gehan Selim, Gad El-Qady and Amin Al-Habaibeh	/	Newton	£230.611,00	Nov 2018 – Oct 2021	Egypt
50	*Learning from Multicultural Amman: Engaging Jordan's Youth*	Durham University	Robin Skeates	Shatha Abu Khafajah, Arwa Emile Massadeh, Lina Bakkar, Maria Elena Ronza, Fatma Marii and Mohd Alqaisi	/	Newton	£192.935,00	Feb 2019 – Jan 2021	Jordan

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
51	*Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage*	Royal Botanic Gardens, Kew	Philippa Ryan	/	Mohamed Saad, Head of Bioarchaeology at the National Corporation of Museums and Antiquities in Khartoum, and Mohammed Hassan, Director of the Kerma Museum, Sudan.	AHRC-GCRF	£78.375,00	Nov 2017 – Aug 2018	Sudan
52	*Learning from the Utopian City: an International Network on Alternative Histories of India's Urban Futures*	University of Leeds	Ayona Datta	Rebecca Madgin, Anu Sabhlok and William Gould	Banaras Hindu University (India), Indian Institute of Science Education and Research Mohali, Tata Institute of Social Sciences (India) and Moolbhoot Hakka Andolan (India)	Newton	£31.800,00	Dec 2015 – Jul 2016	India
53	*Located Making: Unlocking the Potential of Cultural Heritage by Design*	Lancaster University	Stuart Walker	Martyn Evans	The Herdy Company Limited (UK), Crafts Council (UK), BOP Consulting (UK) and Cumbria Crystal (UK)	Newton	£198.933,00	Nov 2018 – Oct 2021	China
54	*MaDiH: Mapping Digital Heritage in Jordan*	*King's College London*	James Smithies (UK) and Fadi Bala'awi (Jordan)	Sahar Idwan and Shaher Er Rababeh	Hashemite University (Jordan), Department of Antiquities (Jordan), Council for British Research in Levant (UK), Jordan Open Source Association and Endangered Archaeology in the Middle East and North Africa (EAMENA) project ('collaborating' partner).	Newton	£202.516,00	Feb 2019 – Jan 2021	Jordan
55	*Monitoring Object and Visitor Environments (MOVE)*	University of Salford	Hisham Elkadi	Richard Fitton, Mostafa Refat Ismail, Hanan Hanan Mostafa Kamal Sabry, Sura Al-Maiyah, Brett Martinson, Inji Kenawy, Ashraf Ali Nessim, Nagwa Lotfy Badr and Karen Fielder; Alex Marshall (Researcher)	Salford Community Leisure Limited (UK), Housing & Building Natural Research Centre (Egypt) and Grand Egyptian Museum	Newton	£188.498,00	Nov 2018 – Jul 2021	Egypt

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
56	*Our Past, Our Future, All Together in Faynan (OPOF)*	University of Reading	Steven Mithen	Fatima Al-Nammari, Jessica Jacobs, Gehan Selim	University of Reading (UK), Department of Antiquities (Jordan), Council for British Research in Levant (Jordan), University of Leeds (UK), University of Petra (Jordan), University of Jordan and Queen Mary University of London (UK)	Newton	£202.384,00	Feb 2019 – Jan 2021	Jordan
57	*PARAMO – Provisioning of Ecosystem Services And CultuRAl Values in the MOntane tropics*	University of Sheffield	David Edwards	Terence Anthony Burke, Duncan Cameron, Tim Daniell, David Neil Petley, Juan Miguel Kanai and Robert Freckleton	Alexander von Humboldt Biological Resources Research Institute (Colombia) and Pontificia University Javeriana (Colombia)	Newton	£1.241.051,00	Jul 2018 – Jul 2021	Colombia
58	*Past Environments, Future Challenges: Fossil Insects and the Preservation of Environmental Evidence from Egyptian Archaeological Sites*	University of Edinburgh	Eva Panagiotakopulu	/	/	Newton	£31.965,00	Feb 2016 – Apr 2018	Egypt
59	*PEACE FESTIVAL: Sharing Creative Methodologies for Unearthing Hidden War Stories for Peace*	University of Bristol	Matthew Brown	Karen Tucker	National Library of Colombia and the Peaceful Women's Route	AHRC-GCRF	£79.249,00	Nov 2016 – Dec 2017	Peru, Colombia
60	*Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls*	Newcastle University	Christopher Whitehead	Tom William Schofield, Altan ASu Robins and Figen Kivilcim Corakbas	/	Newton	£238.459,00	Oct 2016 – Dec 2018	Turkey
61	*Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera*	University of Leeds	Haili Ma	Nick Kaye and Changyong Huang	Shanghai All-Female Yue Opera House, Tiangong Creative Ltd., Bandu Music, Shanghai Yue Opera House M50 Creative Arts Cluster	Newton	£200.165,00	Nov 2018 – Feb 2022	China

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
62	*Preserving Egypt's Cultural Heritage from Earthquake Damage through Vibrating Barriers (ViBa)*	City University London	Ashraf Ayoub	Gamal Mohammed Mostafa, Alessandro Tombari, Pierfrancesco Cacciola, Alfredo Camara and Youssef Fawzy Rashed	/	Newton	£206.929,00	May 2019 – Apr 2021	Egypt
63	*Promoting the Protection of Heritage Sites in Nepal's Western Terai in the Face of Accelerated Development*	Durham University	Robin Coningham	/	Government of Sri Lanka, Maharaja Sayajirao University of Baroda (India) and ICOMOS Nepal	AHRC-GCRF	£48.316,00	Nov 2016 – Oct 2017	Nepal
64	*Reflecting on the River: Rapid Urbanisation and Representations of Indian Cultural Heritage*	University of Sheffield	Nicola Dempsey	Manvita Baradi	Centre for Environment, Fisheries And Aquaculture Science (UK), Humboldt University Berlin, River Stewardship Company (UK), Centre for Environmental Planning and Technology University (India), Northumbria University (UK), The Saamarthya Foundation (USA) and Indian National Trust for Artistic Cultural Heritage	Newton	£34.556,00	Dec 2015 – May 2016	India
65	*Repositioning Graphic Heritage*	Loughborough University	Robert Harland	Andrew Selby and Paul Wells	/	Newton	£202.384,00	Oct 2018 – Sep 2020	China
66	*Research Partnership for an Agroecology-Based Solidarity Economy in Bolivia and Brazil*	Open University	Les Levidow	Davis Sansolo, Andrea Berardi and Mônica Schiavinatto	Observatory of Sustainable Territories and the Community of Jaina Studies (Bolivia)	AHRC-GCRF	£183.384,00	Dec 2019 – Dec 2021	Bolivia, Brazil
67	*Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia*	University College London	Rodney Harrison	Trinidad Rico	Balseiro Institute (Argentina)	AHRC-GCRF	£119.752,00	Nov 2016 – Jun 2017	Argentina

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
68	*Rewriting the Prehistory of Jordan*	Oxford Brookes University	Bill Finlayson	Sahar Al Khasawneh, Samuel James Smith and Abdelraheem Ahmad	Department of Antiquities (Jordan)	Newton	£202.377,00	Feb 2019 – Jan 2022	Jordan
69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*	University of Nottingham (2017-2020), University of Edinburgh (2020-2021)	Jon Henderson	Annamaria La Chimia, Luciana Esteves, Colin Breen, Paul Lane, Garry Marvin, Stephanie Wynne-Jones and Solange Macamo	Ulster University (UK), National Museums of Kenya, Pedagogical University, Royal Agricultural University (UK), Kenya Marine and Fisheries Research Institute, University of Dar es Salaam (Tanzania), Roehampton University (UK), Eduardo Mondlane University (Mozambique), Bournemouth University (UK), The British Museum, Pwani University (Kenya), Kaleidoscopio (Mozambique), 3deep Media Ltd (UK), World Monuments Fund (USA), British Institute in Eastern Africa (Kenya), EcoAfrica Environmental Consultants (Kenya), Western Indian Ocean Marine Science Association (Tanzania), Society for Underwater Technology (UK), UNESCO (France), Zavora Marine Lab (Mozambique) and Nautical Archaeology Society (UK)	AHRC-GCRF, Network +	£1.958.906,00	Oct 2017 – Sep 2021	Kenya, Tanzania, Mozambique, Madagascar
70	*SOIL-SAFE: Employing Archaeological Insights in the Co-Design of Agricultural Soil Erosion Mitigation*	University of York	Daryl Stump	Engdawork Assefa, Philippa Ryan and Suzi Richer	/	AHRC-GCRF	£157.241,00	Dec 2019 – May 2021	Tanzania, Ethiopia
71	*Sounds from a Threatened Suburb: Developing a People's History of Heliopolis as a Route to a Sustainable Urban Future*	University of Leicester	James Moore	/	British University in Egypt	Newton	£20.380,00	Feb 2016 – Dec 2017	Egypt

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
72	*Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities*	Newcastle University	Neveen Hamza	John Pendlebury and Suzanne Speak	Newcastle City Council (UK), Cairo Governorate and Cairo University	Newton	£39.645,00	Feb 2016 – Mar 2018	Egypt
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*	The British Museum	Ilona Regulski	Mohamed Soliman	Ministry of Tourism and Antiquities (Egypt), Takween Integrated Community Development (Egypt), University of Cambridge (UK), Free University Berlin (Germany) and French Archaeological Institute in Cairo (Egypt)	AHRC-GCRF and Newton	£77.367,00	Nov 2016 – Apr 2018	Egypt
74	*Tamil Temple Towns: Conservation and Contestation*	Cardiff University	Adam Hardy	Crispin Branfoot and Oriel Elizabeth Prizeman	DRONAH Foundation (India)	Newton	£175.194,00	Feb 2018 – Aug 2020	India
75	*The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa*	University of Liverpool	Alex Balch	Charles Forsdick, Zoe Trodd, John Richard Oldfield, Lawrence Stephen Barham, Wazi Apoh and Benjamin Kankpeyeng	University of Ghana, Ghana Museums and Monuments Board, British Council, Historians Against Slavery, Yole Africa (Congo), International Slavery Museum (UK), Anti-Slavery International (UK) and Monuments and Relics Commission (Sierra Leone)	AHRC-GCRF	£1.937.271,00	Oct 2017 – Sep 2021	Ghana, Sierra Leone, the Democratic Republic of the Congo
76	*The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development*	Queen Mary University of London	Paul Heritage	Leandro Valiati	British Council, Favela Observatory (Brazil), Kuikuro Indigenous Association of the Alto Xingu (Brazil), Hackney Wick Cultural Interest Group (UK), Spectaculu School of Art and Technology (Brazil), Federal University of Rio Grande do Sul (Brazil) and Agency for Youth Networks	AHRC-GCRF	£86.852,00	Nov 2016 – Jul 2018	Brazil
77	*The Historic City of Ajmer-Pushkar: Mapping Layers of History, Use and Meaning for Sustainable Planning and Conservation*	Cardiff University	Adam Hardy	Oriel Elizabeth Prizeman	DRONAH Foundation (India)	Newton	£30.517,00	Dec 2015 – Jan 2017	India

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
78	*The Hugli River of Cultures Pilot Project, from Bandel to Barrackpore*	University of Liverpool	Ian Magedera	Andrew Davies, Soumyen Bandyopadhyay, Helle Jorgensen and Iain Jackson	/	Newton	£161.701,00	Feb 2018 – Jan 2020	India
79	*The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village*	University of Leeds	Gehan Selim	He Wang, Monther Jamhawi, Shatha Shatha Abu Khafajah, Mohamed Gamal Abdelmonem and Shouib Nouh Mabdeh	Jordan Museum, Council for British Research in Levant (UK) and the Ministry of Tourism and Antiquities (Jordan)	Newton	£200.719,00	Feb 2019 – Apr 2021	Jordan
80	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*	University College London	Eleanor Robson	Paul Collins, Rozhen Mohammed-Ami and Jaafar Jotheri	Sulaimani Polytechic University (Iraq), Al-Qadisiyah University (Iraq), Museum of London Archaeology, Kurdish Textile Museum, Council for British Research in the Levant, Sulaimani Polytechnic University (Iraq), Middlesex University (UK), University of Mosul (Iraq), University of Sheffield (UK), Iran Heritage Foundation, British Institute at Ankara (Turkey), University of Oxford (UK), UNESCO, The National Archives, Richmond (UK), University of Glasgow (UK) Ninevah University (Iraq), Nature Iraq, University of Babylon (Iraq), The British Library, Kingston University (UK), British Institute for the Study of Iraq (UK), University of Leicester, University of Reading (UK), Birmingham Museums and Art Gallery (UK), University of Pennsylvania (USA), UN Assistance Mission to Iraq, Friends of Basrah Museum (Iraq), University of Baghdad (Iraq), University of Manchester (UK) and Iraqi Al-Amal Association	AHRC-GCRF	£1.852.920,00	Oct 2017 – Sep 2021	Iraq, Syria, Lebanon, Turkey

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
81	*The Politics of Performance on the Urban Periphery in South India*	University of Exeter	Cathy Turner	Anindya Sinha and Sharada Srinivasan	MOD Institute (India and Germany)	AHRC-GCRF	£51.719,00	Nov 2017 – Dec 2019	India
82	*Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK*	Science Museum Group	Tilly Blyth	Emma Stirling-Middleton; Carol Chung (Researcher)	Palace Museum (China)	Newton	£201.074,00	Dec 2018 – Oct 2020	China
83	*Transnationalizing Modern Languages: Global Challenges*	University of Bristol	Charles Burdett	Loredana Polezzi, Derek Egerton Duncan and Jennifer Elizabeth Burns; Researchers: Naomi Amelia Stewart Wells and Luisa Andreana Pèrcopo	University of Namibia, City of Edinburgh Council (UK) and Castlebrae Community High School	AHRC-GCRF	£187.527,00	Nov 2016 – Jun 2018	Namibia
84	*Urban Heritage and the Digital Humanities in India*	Lancaster University	Deborah Sutton	Hilal Ahmed	Ambedkar University of the Government of Delhi (India), Indian National Trust for Artistic Cultural Heritage and the 1947 Partition Archive (India)	AHRC-GCRF	£40.022,00	Jan 2018 – Sep 2019	India
85	*Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo*	University of Wolverhampton	Mohamed Gamal Abdelmonem	/	International Association for the Study of Traditional Environments, National Institute of Oceanography and Fisheries (Egypt), Nottingham Trent University (UK), Grand Egyptian Museum, Government of Egypt, Ministry of State of Antiquities (Egypt), Queen's University of Belfast (UK), University of Birmingham (UK) and National Research Institute of Astronomy & Geophysics (Egypt)	Newton	£66.024,00	Feb 2016 – Apr 2017	Egypt

Ref.	Project	Lead Research Organization	Principal Investigator	Co-Investigator(s)	Partners	Fund	Funding Value	Dates of Funding	Project Location
86	*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*	University of Exeter	Emma Loosley	/	Georgian National Museum	AHRC-GCRF	£50.754,00	Jan 2019 – Dec 2021	Georgia
87	*World Heritage FOR Sustainable Development*	University of Birmingham	Mike Robinson	Weimin Que	UNESCO (France) and University of Illinois at Urbana Champaign (USA)	AHRC-GCRF	£47.713,00	Nov 2016 – Dec 2018	UK, China, Jordan, Belgium

Annex 2. Heritage Research Projects and the SDGs

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*			•		•					•							•
2	*A Multi-Isotope Base Map for Jordan: a Tool for Re-examining Movement and Community in the Past*		•		•						•							•
3	*After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*										•	•		•				•
4	*Augmenting Jordanian Heritage*										•	•						•
5	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*			•							•	•					•	•
6	*Building Transdisciplinary Partnerships for Exploring the impact of Population Displacement on Nutrition Interventions*		•	•							•							•
7	*Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage and Subsurface Heritage Protection Protocols in Kathmandu*								•		•	•		•				•
8	*Centre for Digital Copyright and Intellectual Property Research in China*								•	•	•							•

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
9	*Changing Farming Lives in South India, Past and Present*	•	•	•		•					•		•	•		•		•
10	*Changing Food Systems in Kenya and Malawi*		•	•							•							•
11	*China Ports: History, Heritage and Development*								•	•	•	•						•
12	*Co-production Networks for Community Heritage in Tanzania (CONCH)*	•							•		•	•						•
13	*Community-Led Heritage Regeneration in India*										•	•						•
14	*Conserving Cultural Heritage: The Resilience of Forcibly Displaced Syrian Artisans in Jordan*	•							•		•							•
15	*Craft China: (Re)making ethnic Heritage in China's Creative Economy*	•							•		•							•
16	*Cultural Heritage in Landscape: Planning for Development in Turkey*										•	•		•		•		•
17	*Cultures of Expertise: Academics in Exile and their Role in the Future Food Security Agenda for Syria (SyrianFoodFutures)*		•	•		•					•						•	•
18	*Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies*					•					•						•	•

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
19	*Deepening Democracy in Extremely Politically Fragile Countries: Networking for Historical, Cultural and Arts Research on Parliaments and People*					●					●						●	●
20	*Dhiban: Valuing Sites through Valuable Stories*				●	●			●		●							●
21	*Digital Platforms for Craft in the UK and China*								●	●	●							●
22	*Digital Threads: Towards Personalised Craft Production in Malay Cottage Industries*	●				●			●		●							●
23	*Digital Urbanism and Diasporas: Walking the Cultural Heritage of Calcutta's Riverfront*										●	●						●
24	*'Disaster Passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters*			●	●						●	●					●	●
25	*Discovering WF16: Building Engagement with Neolithic Archaeology as Pathway to Economic Development in Southern Jordan*	●							●		●							●
26	*Dominica as a Centre of Excellence for the Preservation and Celebration of the Creole Culture through Language, the Arts and its Indigenous Kalinagos*								●		●	●						●
27	*Egypt's Living Heritage: Community Engagement in Re-Creating the Past*										●	●						●

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
28	*Enduring Connections*			●		●	●				●	●		●	●	●		●
29	*Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat*										●	●		●				●
30	*Fiji's Artistic Heritage: Impact and Engagement in Fiji*				●						●							●
31	*Fishing and Farming in the Desert? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change in Sechura, Peru*		●		●						●			●				●
32	*Following the Wires: Sensing Socio-Material Practices of Everyday Electricity Supply in Post-conflict Greater Beirut*							●		●	●						●	●
33	*Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region*		●								●	●		●	●	●		●
34	*Forgotten Food: Culinary Memory, Local Heritage and Lost Agricultural Varieties in India*	●	●	●							●					●		●
35	*Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia*		●		●	●					●							●

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
36	*HARVEST: High-Mountain Asia – Building Resilience to Water Variability Using Experiments, Surveys and Accounts of Tradition*		•				•				•			•				•
37	*Heritage Matters: Culture and Development in the Pacific*				•						•	•						•
38	*Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating*			•							•							•
39	*Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)*		•								•	•	•	•		•		•
40	*Humanities for Resilience*										•	•						•
41	*Idioms of Distress, Resilience and Well-Being: Enhancing Understanding about Mental Health in Multilingual Contexts*			•							•						•	•
42	*Imaging Minority Culture: Photography, Digital Sharing, and Cultural Survival in Northeast China*								•		•	•						•
43	*Imagining Futures through Un/Archived Pasts – Development Proposal*										•						•	•
44	*Indicators for Informal Learning: a Mobile Heritage Network for Conflict-Affected Communities in Uganda*				•						•						•	•

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
45	*Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience*	•	•	•							•					•		•
46	*Integrating Ecological and Cultural Histories to Inform Sustainable and Equitable Futures for the Colombian Páramos*										•			•		•		•
47	*Interdisciplinary Approach for the Management and Conservation of UNESCO World Heritage Site of Historic Cairo. Application to Al-Ashraf Street*			•							•	•						•
48	*IT INDIAN HERITAGE PLATFORM: Enhancing Cultural Resilience in India by Applying Digital Technologies to the Indian Tangible and Intangible Heritage*								•		•	•						•
49	*LABYRINTH: Conservation, Analysis and Virtual Reconstruction of the Archaeological Site of Hawara Pyramid and Labyrinth (El Fayoum)*								•	•	•	•						•
50	*Learning from Multicultural Amman: Engaging Jordan's Youth*				•						•							•
51	*Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage*		•		•						•					•		•

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
52	*Learning from the Utopian City: an International Network on Alternative Histories of India's Urban Futures*										●	●						●
53	*Located Making: Unlocking the Potential of Cultural Heritage by Design*								●	●	●		●					●
54	*MaDiH: Mapping Digital Heritage in Jordan*									●	●	●					●	●
55	*Monitoring Object and Visitor Environments (MOVE)*										●		●	●				●
56	*Our Past, Our Future, All Together in Faynan (OPOF)*				●				●		●	●						●
57	*PARAMO – Provisioning of Ecosystem Services And CultuRAl Values in the MOntane tropics*										●	●				●		●
58	*Past Environments, Future Challenges: Fossil Insects and the Preservation of Environmental Evidence from Egyptian Archaeological Sites*										●			●				●
59	*PEACE FESTIVAL: Sharing Creative Methodologies for Unearthing Hidden War Stories for Peace*										●						●	●
60	*Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls*										●	●					●	●

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
61	*Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera*					●			●		●	●						●
62	*Preserving Egypt's Cultural Heritage from Earthquake Damage through Vibrating Barriers (ViBa)*										●	●		●				●
63	*Promoting the Protection of Heritage Sites in Nepal's Western Terai in the Face of Accelerated Development*		●						●		●	●						●
64	*Reflecting on the River: Rapid Urbanisation and Representations of Indian Cultural Heritage*										●	●						●
65	*Repositioning Graphic Heritage*										●	●						●
66	*Research Partnership for an Agroecology-Based Solidarity Economy in Bolivia and Brazil*	●	●						●		●					●		●
67	*Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia*							●			●	●				●		●
68	*Rewriting the Prehistory of Jordan*				●	●			●		●							●

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*		•	•	•	•			•	•	•	•	•	•	•		•	•
70	*SOIL-SAFE: Employing Archaeological Insights in the Co-Design of Agricultural Soil Erosion Mitigation*		•								•					•		•
71	*Sounds from a Threatened Suburb: Developing a People's History of Heliopolis as a Route to a Sustainable Urban Future*										•	•						•
72	*Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities*			•					•	•	•	•	•	•			•	•
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*			•	•		•				•	•						•
74	*Tamil Temple Towns: Conservation and Contestation*										•	•						•
75	*The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa*								•		•							•
76	*The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development*	•							•		•	•				•	•	•

Ref.	Project	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
77	*The Historic City of Ajmer-Pushkar: Mapping Layers of History, Use and Meaning for Sustainable Planning and Conservation*										•	•						•
78	*The Hugli River of Cultures Pilot Project, from Bandel to Barrackpore*				•				•		•	•						•
79	*The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village*				•				•		•	•						•
80	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*	•			•				•		•						•	•
81	*The Politics of Performance on the Urban Periphery in South India*										•	•						•
82	*Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK*								•		•	•						•
83	*Transnationalizing Modern Languages: Global Challenges*			•	•						•	•					•	•
84	*Urban Heritage and the Digital Humanities in India*										•	•						•

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Project	*Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo*			*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*				*World Heritage FOR Sustainable Development*									
Ref.	85			86				87									

Annex 3. Projects Publications and Online Resources

Ref.	Project
1	***A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*** *UKRI Gateway for Research*: https://gtr.ukri.org/projects?ref=AH%2FR003920%2F1 *Project website*: http://www.alevelplayingfield.group.shef.ac.uk/ *Bibliography:* • Goellner, S. (2021). Special Issue on Women and Football, *Revista Movimento*, No. 27 (Jan – April 2021) • Wood, D. (2018). 'The Beautiful Game?: Hegemonic Masculinity and Football in Brazil and Argentina,' *Bulletin of Latin American Research* 37(5), pp. 567-81.
2	***A Multi-Isotope Base Map for Jordan: a Tool for Re-examining Movement and Community in the Past*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS011676%2F1
3	***After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP003648%2F1 *Project website:* https://sway.soscbaha.org/ *Other online resources:* https://digital.soas.ac.uk/sway *Bibliography:* • Hutt M. (2015). 'Heritage, continuity and nostalgia', *Cultural Anthropology Online*. • Hutt, M. (2019). Revealing What is Dear: the Post-Earthquake Iconization of the Dharahara, Kathmandu. *Journal of Asian Studies*, 78(3), pp. 549-576. • Hutt M. (2020). 'Before the dust settled: is Nepal's 2015 settlement a seismic constitution?' *Conflict Security and Development* 20.3: 379-400. doi: 10.1080/14678802.2020.1771848. https://eprints.soas.ac.uk/33184/ • Hutt M. (2021, forthcoming) 'Earthquake Aftersongs: music videos and the imagining of an online Nepali public' in *Popular Communication*. • Hutt M., Liechty M. and Lotter S. (eds) (2021, forthcoming). *Epicentre to Aftermath: Rebuilding and remembering in the wake of Nepal's 2015 earthquakes*. Cambridge University Press. • Liechty M. (2021, forthcoming), 'Conditions of Possibility": Rethinking Causation through an Analysis of Nepal Earthquakes' in Disasters.
4	***Augmenting Jordanian Heritage*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP00945X%2F1
5	***Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS005951%2F1 *Project website:* http://brad.ac.uk/BReaTHe *Other online resources:* www.continuingbonds.live; www.bradford.ac.uk/dying-to-talk *Bibliography:* • Evans, A., Croucher, K., Greene, O. & Wilson, A. (2020). *Virtual Heritage for Resilience Building (Version 1)*. Zenodo. http://doi.org/10.5281/zenodo.3950360 • Croucher, K. Büster, L., Dayes, J., Green, L., Raynsford, J., Comerford Boyes, L., and C. Faull . In press. Archaeology and contemporary death: Using the past to provoke, challenge and engage. *PLOS ONE*. • Booth, J., Croucher, K., and E. Bryant 2020. Co-producing resources with young people to get them talking about bereavement, death and dying. *Voluntary Sector Review*.

6	***Building Transdisciplinary Partnerships for Exploring the Impact of Population Displacement on Nutrition Interventions*** *UKRI Gateway for research*: https://gtr.ukri.org/projects?ref=AH%2FT004428%2F1
7	***Can We Rebuild the Kasthamandap? Promoting Post-Disaster Rescue Excavations, Salvage and Subsurface Heritage Protection Protocols in Kathmandu*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP006256%2F1 *Project website:* https://www.dur.ac.uk/cech/unescochair/research/kathmandu/ *Other online resources:* https://www.dur.ac.uk/cech/unescochair/research/kathmandu/resilience/ *Bibliography:* • Ashutosh, K., Hughes, P., Sarhosis, V., Toll, D., Wilkinson, S., Coningham, R. (2020). Experimental, numerical and field study investigating a heritage structure collapse after the 2015 Gorkha earthquake. *Natural Hazards* (101), pp. 231–253. • Coningham, R.A.E., Acharya, K.P. Barclay, C.P., Barclay, R., ... A. (2019). Reducing Disaster Risk to Life and Livelihoods by Evaluating the Seismic Safety of Kathmandu's Historic Urban Infrastructure: enabling an interdisciplinary pilot. *Journal of the British Academy*, (7.2), pp. 45-82. • Coningham, R.A.E., Acharya, K.P., Davis, C.E., Kunwar, R.B., Schmidt, A., Simpson, I.A. (2017). Below the surface in Bhaktapur. *Spaces*, 12(11), pp. 44-54. • Coningham, R.A.E., Acharya, K.P., Davis, C.E., Kunwar, R.B., Simpson, I.A., Schmidt, A., ... Joshi A. (2017). Safeguarding Kathmandu's Buried Past: post-disaster rescue archaeology and survey in Hanumandhoka. • Coningham, R.A.E., Acharya, K.P., Davis, C.E., Weise, K., Kunwar, R.B., Simpson, I.A. (2018). Look down, not up: protecting the post-disaster subsurface heritage of the Kathmandu Valley's UNESCO World Heritage Site. In Bracken, L., Ruszczyk, H.A., Robinson, T. (Ed.), *Evolving Narratives of Hazard and Risk: The Gorkha Earthquake, Nepal, 2015* (pp. 159-181). London: Palgrave Macmillan. • Coningham, R.A.E., Weise, K. (2019). *Ruins and Debris. Philosophical Perspectives on Ruins, Monuments, and Memorials*, Routledge, pp. 275-290. • Davis, C., Coningham, R.A.E., Acharya, K., Kunwar, R., Forlin, P., Weise, K., ... Schmidt, A. (2019). Identifying archaeological evidence of past earthquakes in a contemporary disaster scenario: case studies of damage, resilience and risk reduction from the 2015 Gorkha Earthquake and past seismic events within the Kathmandu Valley UNESCO World Heritage Property (Nepal). *Journal of Seismology*, 24(4). • Davis, C., Coningham, R.A.E., Gunawardhana, P., Pushparatnam, P., Schmidt, A., Manuel, M. (2019). The antiquity of Jaffna Fort: new evidence from post-disaster archaeological investigations in northern Sri Lanka. *Antiquity*, 93(368).
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18	***Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP006248%2F1 *Project website:* www.genderjusticememory.com
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24	***'Disaster Passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS00579X%2F1 *Project website:* https://mountainaglow.org
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63	***Promoting the Protection of Heritage Sites in Nepal's Western Terai in the Face of Accelerated Development*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP005993%2F1 *Project website:* https://www.dur.ac.uk/cech/unescochair/research/protectnet/ *Bibliography:* • Coningham, R.A.E., Acharya, K.P., Kunwar, R.B., Davis, C.E., Manuel, M.J., Simpson, I.A., Strickland, K.M., Hale, D., Tremblay, J. & Lafortune-Bernard, A. (2018). Excavating ancient Kapilavastu: the childhood home of Lord Buddha. *Buddha Rashmi Vesak Volume 2018: Essays in Buddhism and Buddhist Monastic Archaeology*. (pp. 8-25). Colombo: Central Cultural Fund. • Coningham, R.A.E., Acharya, K.P., Kunwar, R.B., Manuel. M.J., Davis, C.E. & Lafortune Bernard, A.. (2017). Promoting the Protection, Preservation and Presentation of the Natal Landscape of the Buddha in Nepal. In *Gunawardhana, P., Coningham, R.A.E., Nampoothri, K. (Ed.), Buddha Rashmi Vesak Volume: Essays in Buddhism and Buddhist Monastic Archaeology* (pp. 13-26). Colombo: Central Cultural Fund of Sri Lanka. • Coningham R.A.E, Lewer, N. (2019a). Communities, Identities, Conflict and Appropriation in South Asia. In *Archaeology, Cultural Heritage Protection and Community Engagement in South Asia* (pp. 151-164). Springer Singapore.

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66	***Research Partnership for an Agroecology-based Solidarity Economy in Bolivia and Brazil*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FT004274%2F1
67	***Restricted Access Pilot Project: Interdisciplinary Perspectives on Clean Energy Production and Landscape Conservation in North Patagonia*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP009158%2F1
68	***Rewriting the Prehistory of Jordan*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS011595%2F1
69	***Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FR005443%2F1 *Project website:* http://www.risingfromthedepths.com *Bibliography:* • Esteves, L.S., Ballesteros, C. (2019). Building an index of exposure to coastal change in eastern Africa with applications to conservation of cultural heritage. *Coastal Sediments 2019.* • Fitton, T., Wynne-Jones, S. (2017). Understanding the layout of early coastal settlement at Unguja Ukuu, Zanzibar. *Antiquity*, 91(359), pp. 1268-1284.

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81	***The Politics of Performance on the Urban Periphery in South India*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS003533%2F1 *Project website:* https://performingtheperiphery.com/category/blog/ *Bibliography:* • Turner C. (2018). Navigations. *Performance Research*, 3(4-5), pp.396-399. • Turner, C., Manohar, R., Narayanan, K., Paily, A., Pallivathukkal, M.M., Vijayan, S. (2019). *A Mis-Guide to Kochi*. Bengaluru: National Institute of Advanced Studies/University of Exeter. • Turner, Cathy. (2020). Walking with Elephants. In Smith, Phil, C.Hind, H Billinghurst. (Ed.), *Walking's New Movements*. Axminster: Triarchy Press.
82	***Time, Culture and Identity: the Co-creation of Historical Research and Co-development of Visitor Experience in China and the UK*** *UKRI Gateway for Research*: https://gtr.ukri.org/projects?ref=AH%2FS003533%2F1 Project website: https://www.sciencemuseumgroup.org.uk/project/time-culture-and-identity/ Other online resources: • Audience Research Report • Knowledge Exchange Workshop Report • Digital Exchange Workshop Report • Lessons Learned Report
83	***Transnationalizing Modern Languages: Global Challenges*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP00900X%2F1 *Other online resources:* https://www.futurelearn.com/courses/working-with-translation (webpage of the MOOC) Mlamo, N. and Polezzi, L. (2020). Learned Society of Wales, Black Lives Matter Series: Language, Inclusivity and the Stories. Video available at:.https://youtu.be/sRGQ6ncUzvg *Bibliography:* • Burdett, C., Burns, J., Duncan, D., Polezzi, L. (2018). *Transnationalizing Modern Languages: Reframing language education for a global future.* Bristol: Policy Bristol.

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85	***Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of Medieval Cairo*** *UKRI Gateway for Research:* http://gtr.rcuk.ac.uk/projects?ref=AH%2FN009347%2F1 *Project website:* http://www.virtualheritagecairo.com *Bibliography:* • Abdelmonem, M. (2017). Architectural And Urban Heritage In The Digital Age: Dilemmas Of Authenticity, Originality And Reproduction. International Journal of Architectural Research: ArchNet-IJAR, 11(3), pp.5-15. • Abdelmonem, M., Selim, G., Mushatat, S., Almogren, A. (2017). Virtual Platforms For Heritage Preservation In The Middle East: The Case Of Medieval Cairo. *International Journal of Architectural Research: ArchNet-IJAR*, 11(3), pp. 28-41.
86	***Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FS003541%2F1 *Project website:* http://architectureandasceticism.exeter.ac.uk/about/wideningparticipation
87	***World Heritage FOR Sustainable Development*** *UKRI Gateway for Research:* https://gtr.ukri.org/projects?ref=AH%2FP006183%2F1

Annex 4. List of Interviews

Ref.	Project title	Interviewee(s)	Researcher	Date
84	*Urban Heritage and the Digital Humanities in India*	Deborah Sutton (Lancaster University)	Deena Dajani	09/07/2019
5	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*	Adrian Evans and Karina Croucher (University of Bradford)	Deena Dajani	10/07/2019
4	*Augmenting Jordanian Heritage*	Andrew Wilson (University of Bradford)	Deena Dajani	10/07/2019
3	*After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*	Michael Hutt (SOAS University of London)	Deena Dajani	16/07/2019
44	*Indicators for Informal Learning: a Mobile Heritage Network for Conflict-Affected Communities in Uganda*	Lizzi Milligan (University of Bath)	Deena Dajani	22/07/2019
76	*The Currency of Cultural Exchange*	Paul Heritage (Queen Mary University of London)	Deena Dajani	22/07/2019
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*	Ilona Regulski (The British Museum)	Deena Dajani	22/07/2019
80	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*	Eleanor Robson (University College London)	Deena Dajani	23/07/2019
75	*The Antislavery Knowledge Network*	Alex Balch and Lennon Mhishi (University of Liverpool)	Deena Dajani	23/07/2019
81	*The Politics of Performance on the Urban Periphery in South India*	Cathy Turner (University of Exeter)	Deena Dajani	24/07/2019
79	*The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village*	Gehan Selim (University of Leeds)	Deena Dajani	25/07/2019
51	*Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage*	Philippa Ryan, Royal Botanic Gardens, Kew	Deena Dajani	25/07/2019
1	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*	David Wood (University of Sheffield)	Deena Dajani	02/08/2019
35	*Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia*	Naomi Sykes (University of Exeter)	Deena Dajani	02/08/2019
32	*Following the Wires: Sensing Socio-Material Practices of Everyday Electricity Supply in Post-Conflict Greater Beirut*	Daniele Rugo (Brunel University London)	Deena Dajani	06/08/2019

80	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*	Amani Jaser Suleiman, University of Kurdistan, and Mehiyar Kathem (University College London)	Deena Dajani	08/08/2019
9	*Changing Farming Lives in South India, Past and Present*	Sandip Hazareesingh (The Open University)	Deena Dajani	05/09/2019
38	*Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating*	Matthew Smith (University of the West Indies)	Deena Dajani	05/09/2019
69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*	Jon Henderson (University of Nottingham)	Deena Dajani	06/09/2019
3	*After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*	Michael Hutt and Stefanie Lotter (SOAS, University of London)	Francesca Giliberto	07/07/2020
24 and 29	*Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat and 'Disaster passed'. Resilient Caribbean Futures via Shared knowledge of recent disasters.*	Wendy McMahon (University of East Anglia), Jenni Barclay, (University of East Anglia) and Karen Pascal (Montserrat Volcano Observatory)	Francesca Giliberto	08/07/2020
45	*Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience*	Krystyna Swiderska (International Institute for Environment and Development) and Philippa Ryan (Royal Botanic Gardens, Kew)	Francesca Giliberto	10/07/2020
61	*Popular Performance for New Urban Audiences: Reconnecting M50 Creative Cluster with Shanghai All-Female Yue Opera*	Haili Ma (University of Leeds)	Francesca Giliberto	14/07/2020
86	*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*	Peter Leeming (University of Exeter) and Darejan Dsotsenidze (Georgian National Museum)	Francesca Giliberto	14/07/2020
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*	Ilona Regulski (The British Museum)	Francesca Giliberto	24/07/2020
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*	Heba Shama (the American University in Cairo)	Francesca Giliberto	27/07/2020
41	*Idioms of Distress, Resilience and Well-Being: Enhancing Understanding about Mental Health in Multilingual Contexts*	Alison Phipps (University of Glasgow)	Francesca Giliberto	29/07/2020

69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits. Sub-project: Bahari Yetu, Urithi Wetu (Our Ocean, Our Heritage)*	John Cooper (University of Exeter), Lucy Blue (Southampton University) and Elgidius Ichumbaki (University of Dar es Salaam)	Francesca Giliberto	30/07/2020
69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*	Jon Henderson (University of Nottingham)	Francesca Giliberto	31/07/2020
1	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*	David Wood (University of Sheffield)	Francesca Giliberto	05/08/2020
1	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*	Juliana Román Lozano (Huracán FC and La Nuestra Fútbol Feminista, Buenos Aires, Argentina)	Francesca Giliberto	11/08/2020
5	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*	Adrian Evans, Karina Croucher and Owen Greene (University of Bradford)	Francesca Giliberto	11/08/2020
28	*Enduring Connections*	Sara Penrhyn Jones (Bath Spa University)	Francesca Giliberto	13/08/2020
51	*Learning from the Past: Nubian Traditional Knowledge and Agricultural resilience, Crop Choices and Endangered Cultural Heritage*	Philippa Ryan, Royal Botanic Gardens, Kew	Francesca Giliberto	14/08/2020

Annex 5. Survey on Heritage for Global Challenges

Main questions:

Project's Contribution to Significant Problem(s)/Developmental Challenge(s)

1. Project title
2. What is its geographical scope?
3. Has your project addressed any of the following Sustainable Development Goals (SDGs)?
4. How has your project addressed the significant problem(s) and/or development challenge(s) identified? What are its most relevant contributions?
5. Which other SDGs might have been addressed by your project (if any)?
6. In your opinion, how important was the collaboration with a UK partner to address this significant problem(s) and/or development challenge(s)?
7. In your opinion, how important was the collaboration with a global partner to address this significant problem(s) and/or development challenge(s)?

Challenges and Recommendations

8. What have been the most important challenges you had to face?
9. How do you think it will be possible to overcome these challenges in the future?
10. Have you encountered welfare and safety issues in your research?

PRAXIS Report and Events

11. How would a final report on Heritage for Global Challenges be useful for your (and your organization's) work?
12. What other stakeholders/influencers do you think will be interested in the final report?
13. Did you attend any PRAXIS events?

Personal Information

14. Do you give consent for the University of Leeds to process personal data?
15. Name and Surname
16. Institution or Organisation
17. Type of institution/organisation
18. Which country are you based in?
19. What is your role in the project?
20. Are you available for an interview to further discuss your project in May/June 2020?
21. E-mail
22. Any other comment?

Survey Respondents:

Ref.	Project	Respondent(s)
3	*After the Earth's Violent Sway: the Tangible and Intangible Legacies of a Natural Disaster*	Michael Hutt (PI), SOAS University of London
9	*Changing Farming Lives in South India, Past and Present*	Sandip Hazareesingh (PI), The Open University and Sandip Pattanayak (Project Partner), GREEN Foundation
13	*Community-Led Heritage Regeneration in India*	Aylin Orbaşli (PI), Oxford Brookes University
18	*Debating, Performing & Curating Symbolic Reparations and Transformative Gender Justice in Post Conflict Societies*	Jelke Boesten (PI), King's College London
24	*'Disaster Passed'. Resilient Caribbean Futures via Shared Knowledge of Recent Disasters*	Jenni Barclay (PI), University of East Anglia
33	*Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region*	Jessica Paddok (PI), University of Bristol
38	*Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating*	Henrice Altink (Co-I), University of York
39	*Human Adaptation to Coastal Evolution: Late Quaternary Evidence from Southeast Asia (SUNDASIA)*	Ryan Rabett (PI), Queen's University Belfast
51	*Learning from the Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage*	Philippa Ryan (PI), Royal Botanic Gardens, Kew
54	*MaDiH: Mapping Digital Heritage in Jordan*	James Smithies (PI), King's College London
56	*Our Past, Our Future, All Together in Faynan*	Nebras Maslamani (Project Manager), The Council for British Research in the Levant
60	*Plural Heritages of Istanbul's World Heritage Sites: the Case of Land Walls*	Chris Whitehead (PI), Newcastle University
65	*Repositioning Graphic Heritage*	Robert Harland (PI), Loughborough University
68	*Rewriting the Prehistory of Jordan*	Bill Finlayson (PI), Oxford Brookes University
69	*Rising from the Depth: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits – Bahari Yetu, Urithi Wetu (Our Ocean, Our Heritage)*	John Cooper (PI), University of Exeter and Lucy Blue (Co-I), University of Southampton
72	*Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities*	Neveen Hamza (PI), Newcastle University and Dalila Elkerdany (Co-I), Cairo University
73	*Sustainable Solutions towards Heritage Preservation in the Asyut Region (Middle Egypt)*	Ilona Regulski (PI), The British Museum
76	*The Currency of Cultural Exchange: Re-thinking Models of Indigenous Development*	Paul Heritage (PI), Queen Mary University of London
78	*The Hugli River of Cultures Pilot Project, from Bandel to Barrackpore*	Ian Magedera (PI), University of Liverpool
80	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*	Amani Suleiman (Post-Doctoral Researcher), The University of Kurdistan-Hawler
81	*The Politics of Performance on the Urban Periphery in South India*	Cathy Turner (PI), University of Exeter
86	*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*	Emma Loosley (PI), University of Exeter

Annex 6. List of Participants 'Heritage and Policy', University of Leeds, 10th December 2019

Participant	Institution	Research Project/Role
Hana Morel	University College London	*AHRC Heritage Priority Area*
Richard Hebditch	National Trust	*Director of Government Affairs*
Ian Baxter	Heriot-Watt University	*Director of Scottish Confucius Institute for Business & Communication*
Lennon Mhishi	University of Liverpool	*The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa*
Karina Croucher	University of Bradford	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*
Eleanor Robson	University College London	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*
Robert Harland	Loughborough University	*Repositioning Graphic Heritage*
Mohamed Gamal Abdelmonem	Nottingham Trent University	*Virtual Reality of Medieval Culture: Collaborative Network for Cultural-Feed Virtual Heritage (CfVH) Platforms of medieval Cairo*
Wendy McMahon	University of East Anglia	*Explosive Transformations: Cultural Resilience to Natural Hazard on St Vincent and Montserrat*
Eirini Gallou	Historic England	*Senior Social Analyst*
Andrew Mcclelland	University of Liverpool	*Heseltine Institute for Public Policy, Practice and Place*
Ataa Alsalloum	University of Liverpool	*Lecturer in Architecture and Urban Heritage*
Ged Hall	University of Leeds	*Academic Development*
Rebecca Madgin	University of Glasgow	*Professor in Urban Studies*
Adrian Evans	University of Bradford	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*
Jon Henderson	University of Nottingham	*Rising from the Depths: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable, Social, Economic and Cultural Benefits*
Oliver Davis	Cardiff University	*CAER Heritage Project*
Tosh Warwick	Manchester Metropolitan University	*History Research Impact Centre*
Andrew Wilson	University of Bradford	*Augmenting Jordanian Heritage*
David Ward	Arts and Humanities Research Council	/
Dominic Persinger	Arts and Humanities Research Council	/
Stuart Taberner	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Deena Dajani	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Lauren Wray	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Paul Cooke	University of Leeds	*Changing the Story*
Inés Soria-Donlan	University of Leeds	*Changing the Story*
Tony Cegielka	University of Leeds	*Changing the Story*

Annex 7. List of Participants 'Food and Heritage', University of Leeds, 8th January 2020

Participant	Institution	Research Project/Role
Tahrat Shahid	UK Research and Innovation	*Challenge Leader/Food Systems*
Naomi Sykes	University of Exeter	*Going Places: Empowering Women, Enhancing Heritage and Increasing Chicken Production in Ethiopia*
Sandip Hazareesingh	The Open University	*Changing Farming Lives in South India, Past and Present*
Theano Moussouri	University College London	*BigPicnic*
Henrice Altink	University of York	*Historical and Epidemiological Transitions in Urban Caribbean Foodscapes: Understanding the Past to Enhance Future Healthy Eating*
Lennon Mhishi	University of Liverpool	*The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa*
Philippa Ryan	Royal Botanical Gardens, Kew	*Learning from The Past: Nubian Traditional Knowledge and Agricultural Resilience, Crop Choices and Endangered Cultural Heritage*
Gill Campbell	Historic England	/
Tim Pank	Arts and Humanities Research Council	/
Siobhan Lambert-Hurley	University of Sheffield	*Forgotten Food: Culinary Memory, Local Heritage and Lost Agricultural Varieties in India*
Egle Cesnylute	University of Bristol	/
Jessica Paddock	University of Bristol	*Food Insecurity at the Time of Climate Change: Sharing and Learning from Bottom-Up Responses in the Caribbean Region*
Jessica Mitchell	University of Leeds	*CE4AMR*
Krystyna Swiderska	International Institute for Environment and Development	*Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience*
Paul Hurley	University of Southampton	/
Alex Hughes	Newcastle University	*Changing Food Systems in Kenya and Malawi*
Tim Brown	Queen Mary University of London	*Building Transdisciplinary Partnerships for Exploring the Impact of Population Displacement on Nutrition Interventions*
Helen Maclagan	United Nations Educational, Scientific and Cultural Organization (UNESCO)	/
Nina Laurie	University of St Andrews	*Fishing and Farming in The Desert? A Platform for Understanding El Niño Food System Opportunities in the Context Climate Change In Sechura, Peru*
Les Levidow	The Open University	*Research Partnership for an Agroecology-Based Solidarity Economy in Bolivia and Brazil*
Lisa Boden	University of Edinburgh	*Cultures of expertise: Academics in exile and their role in the future food security agenda for Syria (SyrianFoodFutures)*
Emma Roe	University of Southampton	/
Rebekah Welton	University of Exeter	/
Carol Palmer	Council for British Research in the Levant	/
Andrew Wilson	University of Bradford	*Augmenting Jordanian Heritage*
Adrian Evans	University of Bradford	*Building Resilience*
Stuart Taberner	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Lauren Wray	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Deena Dajani	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Paul Cooke	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Francesca Giliberto	University of Leeds	*PRAXIS: Arts and Humanities for Global Development*
Nichola Jones	University of Leeds	*Changing The Story*

Annex 8. List of Participants '[Heritage for Global Challenges](#)', West Bek'aa, Lebanon, 24-26th February 2020

Participant	Institution	Research Project/Role
Ioanna Katapidi	University of Birmingham, UK	*World Heritage FOR Sustainable Development*
Daniela Alfonsi	Museu de Futebol, São Paulo, Brazil	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*
Juliana Román Lozano	Huracán FC and La Nuestra Fútbol Feminista, Buenos Aires, Argentina	*A Level Playing Field? The Practice and Representation of Women's and Girls' Football in South America*
Helen Scanlon	University of Cape Town, South Africa	*Debating, Performing and Curating Symbolic Reparations and Transformative Gender Justice in Post-conflict Societies*
Robert Harland	Loughborough University, UK	*Repositioning Graphic Heritage*
Adrian Evans	University of Bradford, UK	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage; Augmenting Jordanian Heritage*
Karina Croucher	University of Bradford, UK	*Building Resilience Wellbeing and Cohesion in Displaced Societies Using Digital Heritage*
Elena Isayev	University of Exeter, UK	*Imagining Futures through Un/Archived Pasts*
Howayda Al-Harithy	American University of Beirut, Lebanon	*Imagining Futures through Un/Archived Pasts*
Lucy Blue	University of Southampton, UK	*Rising from the Depths: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*
Jon Henderson	University of Nottingham, UK	*Rising from the Depths: Utilising Marine Cultural Heritage in East Africa to Help Develop Sustainable Social, Economic and Cultural Benefits*
Bruce Routledge	University of Liverpool, UK	*Dhiban: Valuing Sites Through Valuable Stories*
Stuart Walker	Lancaster University, UK	*Located Making: Unlocking the Potential of Cultural Heritage by Design*
Sandip Pattanayak	Green Foundation, India	*Changing Farming Lives in South India, Past and Present*
Neveen Hamza	Newcastle University, UK	*Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio- Cultural Heritage and Economic Activities*
Dalila Elkerdany	Cairo University, Egypt	*Sustainable Green Markets, Regenerating the Urban Historic Core to Sustain Socio-Cultural Heritage and Economic Activities*
Hisham Elkadi	University of Salford, UK	*Monitoring Object and Visitor Environments (MOVE)*

Mehiyar Kathem	University College London, UK	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*
Abdullah Khorsheed	Iraqi Institute for Antiques, Iraq	*The Nahrein Network: New Ancient History Research for Education in Iraq and its Neighbours*
Lennon Mhishi	University of Liverpool, UK	*The Antislavery Knowledge Network: Community-Led Strategies for Creative and Heritage-Based Interventions in Sub-Saharan Africa*
Michael Hutt	School of Oriental and African Studies, UK	*After the Earth's Violent Sway: The tangible and Intangible Legacies of a Natural Disaster*
Maria Teresa Pinto Ocampo	Universidad Nacional de Colombia, Colombia	*PEACE FESTIVAL: Sharing Creative Methodologies for Unearthing Hidden War Stories for Peace*
Deborah Sutton	Lancaster University, UK	*Urban Heritage and the Digital Humanities in India*
Gehan Selim	University of Leeds, UK	*The Living Museum of Umm Qais: Sustainable Preservation, Analysis and Virtual Reconstruction of Gadara's Ancient Site and Village*
Michele Clarke	University of Nottingham, UK	*Digital Urbanism & Diasporas: Walking the Cultural Heritage of Calcutta's Riverfront*
Aylin Orbaşli	Oxford Brookes University, UK	*Community-Led Heritage Regeneration in India*
Tom Schofield	Newcastle University, UK	*Plural Heritages of Istanbul's World Heritage Sites: The Case of Land Walls*
Cathy Turner	University of Exeter, UK	*The Politics of Performance on the Urban Periphery in South India*
Smirti Haricharan	National Institute of Advanced Studies, India	*The Politics of Performance on the Urban Periphery in South India*
Ilona Regulski	The British Museum, UK	*Sustainable Solutions Towards Heritage Preservation in the Asyut Region (Middle Egypt)*
Heba Shama	The American University in Cairo, Egypt	*Sustainable Solutions Towards Heritage Preservation in the Asyut Region (Middle Egypt)*
Nebras Maslamani	Council for British Research in the Levant, Jordan	*Our Past, Our Future, All Together in Faynan*
Peter Leeming	University of Exeter, UK	*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*
Darejan Dsotsenidze	Georgian National Museum, Georgia	*Widening Participation and Increasing Access to Cultural Heritage and Natural Science Activities in Georgia*
Kate Moles	University of Cardiff, UK	*Indicators for Informal Learning: A Mobile Heritage Network for Conflict-Affected Communities in Uganda*
Ian Magedera	University of Liverpool, UK	*The Hugli River of Cultures Pilot Project, from Bandel to Barrackpore*

Eva Zeidan	Independent researcher, Syria	*Heritage as a Manifestation of Communities' Relationships through Space and Time*
Samar Kanafani	American University of Beirut, Lebanon	*How Past Matter Matters: Inheritance as Heritage in Beirut's Contemporary Ruin*
Charlotte Cross	The Open University, UK	*Heritage and Development: Practicing the Past in the Pursuit of 'Progress'*
John Giblin	Keeper of World Cultures, National Museums Scotland, UK	*Heritage and Development: Practicing the Past in the Pursuit of 'Progress'*
Ian Stanton	Arts and Humanities Research Council, UK	/
David Ward	Arts and Humanities Research Council, UK	/
Jaideep Gupte	United Kingdom Research and Innovation, UK	*GCRF Cities and Sustainable Infrastructure Portfolio*
James Bridge	UK National Commission for United Nations Educational, Scientific and Cultural Organization (UNESCO)	/
Harriet Hoffler	UK Government Department for Digital, Culture, Media and Sport	/
Ian Thomas	British Council, UK	/
Vernon Rapley	Victoria and Albert Museum, UK	/
Laura Jones	Victoria and Albert Museum, UK	/
Carol Palmer	Council for British Research in the Levant, Jordan	/
Muna Haddad	Baraka, Jordan	/
Assad Serhal	Society for the Preservation of Nature in Lebanon, Lebanon	/
Stuart Taberner	University of Leeds, UK	*PRAXIS: Arts and Humanities for Global Development*
Deena Dajani	University of Leeds, UK	*PRAXIS: Arts and Humanities for Global Development*
Francesca Giliberto	University of Leeds, UK	*PRAXIS: Arts and Humanities for Global Development*
Lauren Wray	University of Leeds, UK	*PRAXIS/Changing the Story*
Tony Cegielka	University of Leeds, UK	*PRAXIS/Changing the Story*