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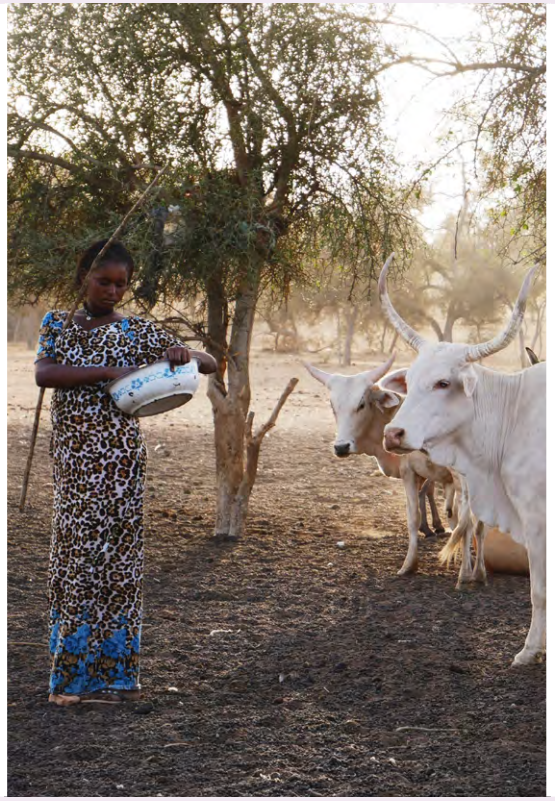

Realising the impact of UK international development research:

A collection of REF2021 impact stories

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About UKCDR

The UK Collaborative on Development Research (UKCDR) brings together government and research funders working in international development. We exist to amplify the value and impact of research for global development by promoting coherence, collaboration, and joint action among UK research funders. Our core contributing members include the Department for Science, Innovation and Technology; the Department of Health and Social Care; the Foreign, Commonwealth and Development Office; UK Research and Innovation; and Wellcome.

For further information on UKCDR, please visit ukcdr.org.uk.

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We would like to thank the researchers, practitioners, and research users in the UK and multiple countries around the globe who shared their experiences and helped us compile these stories.

About this booklet

This booklet showcases ten case studies submitted to the most recent Research Excellence Framework (REF2021). It aims to highlight the impact of UK international development research by showing the connections between what type of real-life impact is achieved and how research is conducted. This collection of case studies intends to help increase the effectiveness of development research and its outcomes by providing key insights and best practice examples that funders, research institutions, and researchers can learn from. It contributes to advancing the research impact agenda by sharing knowledge and leveraging expertise across the research development sector.

In the context of recent changes to the UK's international development research funding and structure, it is imperative that those working in the research for development sector maximise the benefits of international development funding. Reduced Official Development Assistance (ODA) research and development (R&D) funding, combined with the complexity of global challenges, renders clear the need to reflect on how research can deliver the greatest development impact. This case study booklet has been produced as part of the UK Collaborative on Development Research's (UKCDR) ongoing commitment to sharing information and best practice. This commitment underpins our mission to amplify the impact of development research in realising real-life effects.

International development research

Research that addresses global challenges, in alignment with SDGs, and results in political, economic, social, health or environmental change for the benefit of Low- and Middle-Income Countries (LMICs), specific regions, and/or the global community.

This publication is a continuation of UKCDR's work on mapping and understanding the landscape of UK development research impact. Based on our definition of international development research (see box), we identified and analysed a sample of 891 international development research case studies from the REF2021 impact case studies database. This booklet presents a 'deep dive' on ten of those case studies. These ten case studies reflect all four main panels and diverse subject-based sub-panels called Units of Assessment (UoAs) present in REF2021. We conducted interviews with UK-based researchers and their LMIC-based partners to explore the nature of the impact that was achieved and the different elements that supported the research impact process. The deep dive was complemented by a learning workshop that helped refine a new framework of research enablers for development impact. More information on this framework can be found in the associated UKCDR report, *The Landscape of UK Development Research Impact: An Analysis of REF2021 Impact Case Studies* (2023).

REF2021 Main panels

Panel A	Medicine, health and life sciences
Panel B	Physical sciences, engineering and mathematics
Panel C	Social sciences
Panel D	Arts and humanities

We recognise that there are limitations to this work, mainly in relation to the nature of REF2021 submissions, wherein impact case studies represent a limited body of research that is carefully selected and curated. REF guidelines require submissions to follow a structured template to describe impact achieved between 2013 and 2020, underpinned by research carried out between 2000 and 2020. Moreover, as an assessment framework, the outcomes of REF provide research funding bodies with evidence to inform grant allocations. They also establish reputational yardsticks within the higher education sector. Therefore, this booklet only presents a snapshot of success stories within UK international development research and the key mechanisms that paved the way to achieve research impact.

Understanding impact

We recognise that research impact is not a linear and straightforward process. It is often a broad and complex combination of contexts, timescales, funding programmes, research projects, and diverse actors that come together to build different forms and levels of effects. In

general, research can lead to academic and non-academic impacts. Academic impacts refer to significant contributions made to academic advances in theory, methods or applications across and within disciplines (often measured by bibliometrics). Non-academic impacts are demonstrable real-life contributions of research for the benefit of individuals or communities. UKCDR created an impact framework based on existing literature on non-academic research impact that includes four main categories. All case studies in this booklet showcase several types of non-academic impact, which can be identified by the colours on the lefthand side of the table below.

Table 1 Types of non-academic research impact

Colour code	Impact type category	Subcategory description
●	**1. Conceptual** Changes in ways of understanding, addressing or debating around a specific topic.	Raising awareness.
		Reframing debates.
●	**2. Instrumental** Changes on policy and/or practices in government, businesses, professional academies or civil society.	Influencing policy positions, decisions, and/or agendas.
		Influencing changes in practices and/or behaviours.
●	**3. Learning and development** Strengthened capacities of LMIC research-users at different levels.	Improved LMIC research users' knowledge and/or skills.
		Strengthened capacities of LMIC organisations and/or systems.
●	**4. Networks and connectivity** New or strengthened formal or informal partnerships or engagements that deepen the use or application of the research.	New formal partnerships established.
		Strengthened existing partnerships.
		New informal relationships developed.

Enabling impact

In light of a broader understanding of impact, UKCDR created a research enablers framework which highlights the mechanisms necessary for research to generate positive and sustainable change in the context of international development. Taking flexibility and collaboration as core principles, the framework highlights six dimensions and several research enablers that can support real-life impact throughout and beyond research cycles. The case studies in the booklet showcase different research enablers, which can be identified by the icons on the lefthand side of the table below.

The collection of case studies and research enablers presented in this booklet exemplify best practices that can help guide the research community to conduct impactful research.

Funders and research institutions can draw on these examples to inform future UK research funding call approaches, reflect on the incentives that sit behind impact plans, and provide leadership to the global research community on sustaining and building new practices to create an enabling environment for realising development outcomes.

Table 2 Research enablers framework

Enabling Dimension	Research impact enabler
Understanding of impact	Recognise different timescales for achieving impact
	Recognise various forms of impact evidence
	Recognise the role of serendipity
	Address power imbalances in research outcomes
	Acknowledge the role of research networks in amplifying impact
Funding approaches	Encourage challenge-led interdisciplinary and transdisciplinary research
	Value a plurality of funding mechanisms
	Encourage decentralised funding approaches
Co-production with research users	Support research user involvement and ownership over research process and outputs
	Embed ethics around research funding and aims
	Address power imbalances in knowledge systems
	Engage with different research users at multiple levels
Long-term equitable partnerships	Develop long-term academic collaborations
	Recognise the role of local intermediaries
	Address power imbalances within partnerships
	Acknowledge added value of relationships and lived experience
Embedded capacity building and learning	Take a long-term programmatic approach
	Embed multi-way continuous learning processes across all partners and disciplines
	Focus on research management and support functions
Operational processes	Balance contracting requirements with partners' capacities and on-the-ground realities
	Support visa applications to enable two-way knowledge exchange
	Simplify due diligence and procurement processes
	Support project management and communication tasks

UK International development research case studies

P. 6 **One health approach to tackle neglected tropical diseases:**

Elucidating the transmission dynamics of schistosomiasis to inform sustainable control in Africa

P. 7 **Radio astronomy and big data upskilling:**

Bringing STEM training to the developing world

P. 8 **Smart preservation of Middle Eastern urban and cultural heritage:**

Shaping policy and practice

P. 9 **Strengthening the Indian foundry sector:**

Application of non-destructive ultrasonic testing for metal castings and developing Indian foundry workers' skills

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Participatory video and community owned solutions to increase representation within environmental management and governance

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Using hydromorphology to inform public health strategies in Africa

P. 12 **Performing Development:**

Progressing the United Nations Sustainable Development Goals (UN SDGs) in territories subject to multiple stress factors through collaborative arts-based research projects

P. 13 **Closing the global mental health gap:**

Integrating mental healthcare into primary care in Low- and Middle-Income Countries

P. 14 **Children Born of War:**

Empowering advocacy, enhancing wellbeing and changing their experiences in the present and the future

P. 15 **Driving sustainable urban waste policy and practice in India:**

Transdisciplinary research for an alternative waste management approach

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One health approach to tackle neglected tropical diseases: Elucidating the transmission dynamics of schistosomiasis to inform sustainable control in Africa

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Lead	Royal Veterinary College (RVC)
Panel	A – Medicine, health, and life sciences
UoA	6 – Agriculture, food, and veterinary sciences
Location	Mali, Niger, Senegal
Funders	Bill & Melinda Gates Foundation, Biotechnology and Biological Sciences Research Council (BBSRC), Defence Science and Technology Laboratory (DSTL), Department for International Development (DFID)[1], Economic and Social Research Council (ESRC), Medical Research Council (MRC), Natural Environment Research Council (NERC), Research England
Funds or grants	Connecting Capability Fund, Global Challenges Research Fund (GCRF), Impact Acceleration Account Extension Award 2017, Zoonoses and emerging livestock systems (ZELS) initiative
Partners	In **Niger**: Réseau International Schistosomiases Environnement Aménagement et Lutte Niger (RISEAL). In **Senegal**: Université Gaston Berger, Université Cheikh Anta Diop. In **UK**: Natural History Museum

"It's essential to have the money sent before, because some [LMIC] institutions don't have a reserve. And even if they have some money, it is already allocated for a specific project. So, it's important to have flexibility on making transfers before getting the invoice, and to acknowledge that sometimes it's difficult to carry out the activities as planned because challenges can occur during the implementation."

UK-based researcher

Photo credit: Elsa Léger

1 Replaced by the Foreign, Commonwealth and Development Office (FCDO).

Summary

Schistosomiasis, a neglected tropical disease caused by parasitic worms called schistosomes, affects over 240 million people and untold billions of their livestock across Low- and Middle-Income Countries (LMICs). It leads to serious health conditions that affect the wellbeing and productivity of humans and animals. RVC collaborated with African partners to uncover the nature of schistosomes and recommend adequate control approaches. The project's One Health approach recognised the role of hybridised parasites of humans and livestock in perpetuating transmission of human schistosomiasis. The work also highlighted unmet needs and the misuse of praziquantel, the only effective drug for schistosomiasis, in livestock, and the risk of drug resistance. This work underscores the need for interdisciplinary research and considering animal reservoirs in combating schistosomiasis.

Key impact

Improved knowledge of schistosomiasis disease

- Researchers and local community members improved their understanding of schistosomiasis transmission, signs, and treatment. Community workshops and focus group discussions with farmers and veterinary technicians as well as educational resources for children and families facilitated raising awareness on the symptoms and effects of the disease.

Influenced international policy and improving therapeutics

- Research findings influenced the World Health Organisation's (WHO) new Roadmap for neglected tropical diseases, and guidelines on the Control and elimination of human schistosomiasis and Sanitation and health, which now highlight the role of animals in disease transmission in Africa and Asia.
- Work with pharmaceutical partners contributed to widespread access to animal treatment via proper veterinary-formula drugs and dosage.

Improved LMIC partners' diagnostics skills and schistosomiasis research capacities

- Improved capacity and expertise of local professionals to diagnose, assess, and monitor morbidity profiles in humans and animals using ultrasonography.
- Contribution towards open access bio-bank schistosomiasis collection composed of snails, worms, and material for molecular analysis that has supported further research on the tropical disease.

Strengthened LMIC research working networks

- Facilitated the expansion of the RISEAL schistosomiasis research community, leading to further joint collaborations in Niger and other African countries.

Underpinning research enablers

Value of a plurality of funding mechanisms

- ***Taking advantage of small grants:*** Beyond the project's core funding, impact accelerator awards provided additional funding that allowed the project to take an interdisciplinary approach and thus improve the understanding of the links between sociocultural practices and disease transmission, thus meeting local community needs.
- ***Branching out research activities to effectively address multiple needs:*** Dedicated funding for treatment data collection helped refine the evidence of animal-human transmission and explore different avenues of disease control. Additional funding allowed for collaboration with the pharmaceutical industry to prevent drug misuse and enhance livestock treatment access.

Balance contracting requirements with partners' capacities and on-the-ground realities

- ***Understanding the local financial landscape:*** The project ensured easier and efficient transfer of funds by actively exploring alternative routes to overcome administrative challenges (e.g., identifying local banks with links to UK banks, mediating with suppliers).
- ***Meeting the financial realities of LMIC stakeholders:*** Prompt financial support (e.g., per diem fieldwork payments) built strong and long-lasting relationships with partners and suppliers. Advocating for flexible funding arrangements (e.g., small amounts of funding distributed in advance) enabled quick implementation of fieldwork activities and helped the research team adapt to unforeseen circumstances.

Radio astronomy and big data upskilling: Bringing STEM training to the developing world

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Download case study

Lead	University of Manchester
Panel	B - Physical sciences, engineering, and mathematics
UoA	9 - Physics and astronomy
Location	Botswana, Colombia, England, Ghana, Kenya, Madagascar, Mauritius, Mexico, Mozambique, Namibia, South Africa, Thailand, Zambia
Funders	European Commission (EU), Science and Technology Facilities Council (STFC)
Funds or grants	Global Challenges Research Fund (GCRF), Horizon 2020, Newton Fund
Partners	In **Africa**: Botswana International University of Science and Technology, Eduardo Mondlane University, Ghana Space Science and Technology Institute, Technical University of Kenya, Department of Science & Innovation (South Africa), South Africa Radio Astronomy Observatory, University of Antananarivo, University of Mauritius, University of Namibia, University of Zambia. In **Thailand**: National Astronomical Research Institute of Thailand (NARIT). In **UK**: Goonhilly Earth Station, Jodrell Bank Centre for Astrophysics (JBCA), University of Bristol, University of Central Lancashire, University of Leeds, University of Hertfordshire, University of Oxford, University of Sussex, University of York. **International**: International Astronomical Union Office of Astronomy for Development (IAU-OAD), Inter-University Institute for Data Intensive Astronomy (IDIA)

"The programme impacted the way we teach. The hands-on training model was adopted by Kenyan universities' curriculum as they realised real data and field trips to firms enrich the experience. There were also some spin-offs, post-doctoral students leading new projects, others creating STEM courses for local communities, and even some setting up new NGOs to train on the basics of astronomy and other areas. And then some others realised they can apply for grants themselves and develop their own ideas."

LMIC-based trainee

Summary

Gaps in Science, Technology, Engineering, and Mathematics (STEM) capacities directly affect Low- and Middle-Income Countries' (LMICs) research and economies. The Development in Africa with Radio Astronomy (DARA) (led by University of Leeds) and DARA Big Data (led by University of Manchester) programmes are sister initiatives that support STEM training and infrastructure development in Sub-Saharan Africa. Through UK academic and industry partnerships, these two programmes provided training in radio astronomy (e.g., Very Long Baseline Interferometry and the Square Kilometre Array) and big data research. Using relevant, local and real-life datasets and issues (e.g., drought management, social media coverage of COVID-19), they contributed to the development of competitive data- and science-driven socio-economic development in Africa.

Key impact

Built a new generation of African scientists and STEM practitioners

- DARA provided basic and advanced training in radio astronomy to over 300 graduates and 30 postgraduate students. DARA Big Data expanded to further data-science and science policy training to over 550 people across eight African countries. Dissemination of both programmes raised awareness on the importance of STEM skills among over 1,000 children, community leaders, and policymakers.
- Following in-depth technical STEM courses (e.g., astrophysics, agricultural data science, and cancer science) and soft skills mentoring (e.g., leadership and entrepreneurship), students undertook research, social, and commercial activities in their home countries.
- Hackathons and school science fairs highlighted the value of interdisciplinary data science and machine learning techniques applied to real-life development problems. Guest presentations and workshops exposed trainees to broader industry applications that helped them recognise the potential of STEM in Africa.

Informed government policy discussions and practices in Africa and the UK

- DARA Big Data science promotion and STEM outreach activities contributed to the Kenyan government's white papers on food security and drought management. In the UK, findings informed the UK government's briefing notes on environmental remote sensing and machine learning.
- DARA influenced Ghana's practices on primary and secondary physics education. Adapted students' curriculums now include in-school teaching on physics, astronomy clubs and visits to the Radio Astronomy Observatory (GRAO), thus increasing awareness and interest in STEM subjects.

Supported African research facilities

- Research contributed to a telecom antenna conversion for radio astronomy at GRAO. The antenna's pivotal role in Ghana has garnered investment, improved local services and offered science training opportunities for skilled workers.
- In Kenya, in addition to data-management training, the programme supported the acquisition of special computers, servers, and other data-processing infrastructure. This has allowed Kenyan researchers to undertake their own research processes.

Underpinning research enablers

Recognise different timescales for achieving impact

- ***Post-grant cascading effects:*** The programmes achieved impact beyond the end of funding schemes. Following training, DARA alumni fostered networks and gained scientific leadership positions (e.g., Deputy President of the African Astronomy Society and Secretary of an East African astronomy society). Alumni also developed social, environmental, and commercial spin-offs, including educational initiatives for school students in Ghana and Kenya, an ethical astro-tourism business in Kenya, and various start-ups in Zambia.
- ***Inspiring similar STEM initiatives:*** DARA's success inspired activities beyond the scope of the two programmes, thus reaching an even larger audience. Global partners (IAU-OAD and IDIA) developed similar challenge-led hackathons, LMIC Universities (Kenya) adapted their STEM training approach, and UK funders (STFC) supported similar models in Newton-funded countries (Colombia, Mexico and Thailand).

Take a long-term programmatic approach

- ***Long-term approaches enabled sustainability and scalability of impact:*** Following collaboration in Ghana, since 2014, DARA's STEM training has expanded to include multiple African countries. Later, DARA Big Data added science communication and policy advocacy components. Both programmes leveraged existing collaborations with research institutes and the space sector (Goonhilly Earth Station, South African National Space Agency), supporting the continuity of engagement with policymakers and industry partners.
- ***Long-term capacity strengthening:*** Research created comprehensive training to enhance skills, technical knowledge, and capacity of LMIC individuals (trainees) and institutions (African universities and research centers), thus supporting incremental progress in LMICs' STEM systems.

Smart preservation of Middle Eastern urban and cultural heritage: Shaping policy and practice

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Lead	Nottingham Trent University (NTU)
Panel	C - Social sciences
UoA	13 – Architecture, built environment, and planning
Location	Egypt, Iraq, Jordan, UK
Funders	Academy of Scientific Research and Technology (Egypt), Arts and Humanities Research Council (AHRC), British Academy
Funds or grants	Egyptian Science and Technology Development Fund (STDF), Global Challenges Research Fund (GCRF), Newton Fund
Partners	In **Egypt**: National Research Institute of Astronomy and Geophysics (NRIAG), Ministry of Tourism and Antiquities (MoTA). In **Iraq**: Department of Antiquities and Heritage, University of Mosul, University of Wasit. In **Jordan**: Department of Antiquities. In **UK**: University of Leeds

"Our project targeted vulnerable youth in local communities, raising awareness about the risk of losing historical practices and teaching them how to document cultural heritage. Workshops equipped them with tools, technology, and supervision to engage with senior community members and record heritage practices. Recordings were compiled into a comprehensive database of videos, interviews, and documentation of historic buildings by the people of Mosul. This work has been developed into a major exhibition."

LMIC-based research user

Photo credit: © 2023 NTU&CAUGH, Virtual Hawara Project

Summary

Historical sites, artefacts, and cultural heritage around the world face several threats, including conflict, climate change, commercialisation, and tourism. Researchers created a framework to preserve heritage sites in the Middle East and North Africa (MENA) that combines virtual modelling, laser scanning, socio-cultural studies, and local narratives. The framework includes recording and digitising protocols, artifact analysis, remote sensing, environmental and geophysical analysis, community engagement, and collaboration with museums and heritage institutions. It embeds historic and archaeological knowledge and socio-cultural local narratives to ensure the socio-economic relevance of heritage sites.

Key impact

Informed MENA region policies and decision making

- Collaboration with MoTA and NRIAG resulted in a policy document for managing digital preservation platforms in Egypt. The guide prompted events with ministers and influenced decisions on digital tools to showcase urban and cultural heritage in the tourism sector. Following research recommendations, the MoTA launched a virtual tour of 16 archaeological and heritage sites during COVID-19 travel restrictions.
- Research shaped Mosul and Baghdad's heritage preservation strategies, incorporating socio-cultural narratives based on local community engagement and active involvement in documenting and preserving local assets. This work informed Baghdad Mayoralty's Heritage Preservation Roadmap and the Department of Antiquities' approaches to heritage preservation and economic opportunities for vulnerable communities in Mosul post-war recovery.

Impact on heritage sector capacity building

- NTU delivered practical training programmes to over 200 young practitioners, government officials, and heritage professionals in Egypt, Jordan and Iraq.
- Training resulted in the creation of five new Egyptian start-ups on virtual modelling initiatives to protect cultural heritage and two small or medium enterprises (SMEs) in Jordan, which led on the delivery of digital scanning and modelling of historic and complex structures.
- Research led by the University of Leeds supported the Jordanian Department of Antiquities to include laser scanning and digital modeling at Gadara Archaeological Site and Hara Fouqa (Ottoman village) for the interactive virtual Living Museum of Umm Qais.
- Establishment of the first British-Egyptian joint Centre of Virtual Heritage Technologies (BECAVE) based at the NRIAG in Egypt.

Underpinning research enablers

Value of a plurality of funding mechanisms

- ***The value of seed funding:*** Internal NTU funding initiated the project, facilitating networking with public organisations in Low- and Middle-Income Countries (LMICs) and engagement with international collaborators.
- ***Learning from experience to create more targeted applications:*** Unsuccessful funding applications were useful to build trust-based partnerships, better understand local needs, and identify alignments with funding calls. These lessons leveraged new applications to multiple funding sources.
- ***Addressing multiple research topics and locations:*** Newton funding focused on tackling socio-cultural issues via virtual reality models of historic cities (Iraq), building capacity within the digital industry and policymakers (Egypt), and research on community heritage (Egypt and Jordan). GCRF funding enabled activities in Iraq, including lost socio-cultural heritage mapping (Old Mosul) and community heritage preservation and economic opportunities in Iraqi conflict-prone zones (Baghdad). Match funding from the STDF in Egypt supported the Virtual Hawara initiative, which preserves the Hawara Pyramid and Labyrinth archaeological site.

Engage with different research users at multiple levels

- ***Driving transformative change via local non-academic partnerships:*** Collaboration with government bodies, creative industries, and civil society organisations in the MENA region was largely beneficial. In Egypt, capacity building activities bridged gaps between cultural heritage preservation and socio-economic issues in the tourism sector, fostering formal public-private partnerships and start-up business development. In Iraq, engagement with policymakers, and community-led activities refocused research on documenting lost heritage and preserving cultural heritage in various cities.

Strengthening the Indian foundry sector: Application of non-destructive ultrasonic testing for metal castings and developing Indian foundry workers' skills

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Lead	University of Northampton
Panel	B - Physical sciences, engineering, and mathematics
UoA	12 - Engineering
Location	India
Funders	European Commission (EC), Royal Academy of Engineering
Funds or grants	7th Framework Programme for European Research Area, Newton-Bhabha Fund
Partners	In **India**: Hindustan Institute of Science & Technology, INDSAT Corporation

"All the Indian stakeholders, including workers, and company managers, showed their active participation in building the training programme ... about 50-60% of the contents was customised by them. After that, each meeting led to fine tuning and to many iterations of the training materials purely based on industry requirements."

LMIC-based research user

Summary

As the second-largest metal casting producer, India urgently needs to upgrade casting inspection processes and address a shortage of skilled foundry workers. UK-based and Indian researchers collaborated with industry partners to create a non-destructive, cost-effective, and potentially automated technique for measuring and testing casting components. The project also included specialised training and skill development for foundry workers to address capacity gaps in Indian foundries capable of using this laser and ultrasonic 3D scanning system. The results of this research helped the Indian metal sector to meet industry quality standards and reliability for increased business capacity.

Key impact

Innovative testing casting technique

- New non-destructive testing method enabled the generation of a 3D computer model, helping foundry industries improve the quality and efficiency of casting, and leading to increased automation in the inspection process. The new technique, adopted by 17 Indian foundries, is more environmentally friendly as it reduces approximately 20% of metal components waste and reduces 12% of money spent to dispose of rejected components. It has the potential to lead to further automation in the inspection process of manufactured castings.

Specialised training to meet global quality standards

- Researchers developed a locally-led training programme with industry partners, upskilling 76 foundry technicians and supervisors in the new technique, which meets ISO energy and environmental management requirements and standards of the American National Standards Institute, and American Society of Mechanical Engineers.

Sustainable partnership strengthening

- Hindustan University developed a new foundry skilled development centre to continue long-term training. The University of Northampton created a BSc (Hons) course on non-destructive testing.

Underpinning research enablers

User involvement and ownership over research process and outputs

- ***Ensuring adequate contextualisation through early conversations with research users:*** By actively involving industry partners and seeking their input through initial surveys and discussions, researchers ensured that the project addressed specific local industry needs (e.g., skill shortage in modern inspection technologies).
- ***Expanding research uptake:*** Industry workers actively contributed to contextualising the training materials including translating them from English to Tamil. This enhanced the training program's local relevance, gave continuity to user engagement, and enabled a broader audience to benefit from the training.
- ***Help in overcoming challenges:*** Committed company managers leveraged existing relationships to organise the training program during weekends and found a suitable location near multiple industries. They also provided sample materials for educational purposes. Industry support ensured greater accessibility and participation from industry workers and a hands-on training approach.

Multi-way continuous learning processes across all partners and disciplines

- ***Fostering an open and active communication channel:*** Regular in-person visits and online meetings between collaborating academic and non-academic partners enabled a dynamic research environment where insights, challenges, and discoveries could be exchanged. This led to a deeper and shared understanding of the project's expected outcomes.
- ***Academic relationships expanded the project scope:*** The projected impact ultimately expanded as collaboration between University of Northampton and Hindustan Institute of Science & Technology was extended to include research students and postdoctoral researchers. Interaction between the project team and students created a knowledge-sharing dynamic, enriching findings and inspiring follow-on projects.
- ***Shaping outcomes through collaboration and inclusiveness:*** 17 Indian industries contributed to the design and delivery of training materials, ensuring that the curriculum aligned with industry needs. This increased the practical relevance and applicability of new methods, facilitated knowledge dissemination to a wide range of metal industry actors and, ultimately, supported long-term impact.

Amplifying Indigenous knowledge in South America: Participatory video and community owned solutions to increase representation within environmental management and governance

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Lead	Royal Holloway and Bedford New College
Panel	C – Social sciences
UoA	14 – Geography and environmental studies
Location	Brazil, French Guiana, Guyana, Suriname, Venezuela
Funders	Department for Environment, Food and Rural Affairs (DEFRA), European Union (EU), Foreign and Commonwealth Office (FCO)[1], The British Academy, The Woodspring Trust, United Nations Development Program (UNDP)
Funds or grants	Darwin initiative, EU Seventh Framework Programme, Global Environment Facility (GEF) Small Grants Programme, Strategic and Bilateral Programme Fund
Partners	In **Guyana**: North Rupununi District Development Board, Ministry of Amerindian Affairs, Environmental Protection Agency, Protected Areas Commission. In **UK**: Royal Holloway University of London, Cobra Collective, The Open University. In **Venezuela**: Universidad Simón Bolívar.

"In the communities we work with, we consult with the village council to determine the scope of our project and the stipend budget. The council then decides how to distribute the funds among the community researchers. Since our team made regular visits, they would bring the allocated money to pay individuals while assessing the required tasks."

UK-based researcher

Photo credit: Claudia Nuzzo

1 Replaced by the Foreign, Commonwealth and Development Office (FCDO).

Summary

While Indigenous communities are recognised for their sustainable management approaches, their socio-economic and environmental views and needs are often neglected. Collaborations between UK-based and South American researchers, civil society organisations, and Indigenous communities advocated for the inclusion of Indigenous knowledge in decision-making processes. The research explored two topics: (1) the effects of participatory video approaches in Indigenous communities' engagement and capacity building and (2) approaches for including Indigenous voices in national decision-making forums on environmental management and governance.

Key impact

Deepening awareness on Indigenous knowledge and supporting local capacities through participatory videos

- Training of 100 Indigenous researchers in Guyana in participatory video methodologies served as a powerful communication tool for sharing and raising awareness on their communities' views and practices and influencing opinion among policymakers.
- Participatory videos showcased the role of Indigenous knowledge in biodiversity conservation and climate mitigation. These videos influenced the perception of policymakers on the connections between culture and biodiversity. They also fostered pride and intergenerational transmission of ancestral knowledge.

Deepening the understanding of Indigenous knowledge among policymakers and Non-Governmental Organisations (NGOs)

- In Guyana and Venezuela, Indigenous associations, government agencies, and NGOs collaborated on the research and development of training courses. This led to improved skills and knowledge, helped shift perceptions around the value of Indigenous knowledge, and modified the way in which policymakers and social organisations involve Indigenous communities in local projects.

Greater representation of Indigenous knowledge in policymaking processes

- In Guyana, intercultural workshops and video-mediated dialogues provided safe spaces for dialogue, fostering solidarity and collective agency. They also improved relationships between Indigenous communities and protected area managers, resulting in the development of the Traditional Knowledge National Action Plan (TKNAP) to strengthen Indigenous knowledge preservation and usage.
- Workshops on fire management in Venezuela and Brazil facilitated understanding, empathy, and mutual trust among Indigenous leaders, government agencies, and academics. Venezuelan government ministers now recognize and accept Indigenous fire management practices, leading to policy changes.

Underpinning research enablers

Embed ethics around research funding and aims

- ***Budget allocation for community participation:*** Salary payment was discussed with the village council for all community researchers involved in the project. Amid budget constraints, research management decisions mindfully factored in hidden costs for community participation (e.g., childcare needs or transport costs when commuting to locations with reliable internet connectivity).
- ***Benefits of an ongoing participatory consent process:*** Participants' engagement and data collection were framed around principles of safeguarding and equity, diversity, and inclusion. Constantly checking that Indigenous communities felt comfortable and adequately represented in the research process fostered a high level of participation from these communities in defining the desired outputs and relevant dissemination alternatives along with creating the audio-visual materials. After the project ended, it also enabled stronger local ownership of the materials as well as subsequent dissemination and community research activities.

Recognise the role of local intermediaries

- ***Considering invisible work:*** Research benefitted from a lot of voluntary brokering work undertaken by community leaders (e.g., negotiations with different leaders, supporting methodology application of community researchers, encouraging local engagement).
- ***Leveraging connections with key individuals to encourage buy-in:*** As non-academic partners in South America transitioned to other positions or organisations, sustained relationships with them facilitated the dissemination of research value to senior management and fostered community ownership.

Mapping malaria transmission: Using hydromorphology to inform public health strategies in Africa

UKCDR

Download case study

Lead	University of Lincoln
Panel	B - Physical sciences, engineering, and mathematics
UoA	12 - Engineering
Location	Zambia
Funders	Canadian Institutes for Health Research, Natural Environment Research Council (NERC), Queen Elizabeth II Diamond Jubilee Scholarship
Funds and grants	NERC Standard Grant, Queen Elizabeth Scholarships Advanced Scholars program
Partners	In **Canada**: Canadian Association for Global Health (CAGH). In **Zambia**: Zambezi Water Resources Management Authority (WARMA), Zambezi EcoHealth Partnership (ZEP), Ministry of Health (MoH)

"The Ministry of Health put a huge amount of resource into those early meetings. They convened big meetings with senior clinicians and managers in the health system for a day or two at a time, investing a lot of resources, time, and effort into receiving us. From the beginning, it always felt to me like a Zambia-led project."

UK-based researcher

Photo credit: Dónall Cross

Summary

Despite public health interventions, malaria is still prevalent in some regions across sub-Saharan Africa. UK-based, Zambian, and Canadian researchers studied malaria mosquito control strategies in the Upper Zambezi catchment, Zambia's Western Province. Genetic sequencing revealed an unexpected prevalence of daytime outdoor malaria mosquitoes in the floodplains, which evade conventional interventions like bed nets and indoor insecticide spraying. Researchers developed national malaria transmission maps with annual flood habitats suitable for these species, including at-risk area estimates and climate change projections. The findings fed into Zambia's national malaria elimination goal strategies.

Key impact

Increased understanding of malaria trends within the policymaking community and enhanced vector control strategies

- Research highlighted that seasonal flooding along major rivers and floodplains extends malaria transmission seasons via secondary vector species. This new insight filled a significant gap in malaria prevention strategies.
- Hydroclimate national and provincial maps identified areas in need of more malaria control. These maps helped the Zambian MoH plan and implement malaria control and elimination interventions (e.g., village-scale planning).

Capacity building for environment and health research in Zambian Western Province

- Field training and use of technology training was delivered to six local University of Barotseland students, empowering them with skills in GPS usage, study design, sampling, data recording, and field logistics.
- The research facilitated successful applications for external funding, enabling three Zambian physicians and health workers from Western Province to begin PhD training in Canada.

Strengthening collaboration for Zambia's health system

- The research contributed to strengthen and sustain collaboration within the Zambezi Ecohealth Partnership (ZEP), an initiative led by the MoH, WARMA, and the CAGH that provides evidence to address pressing health and wellbeing issues, and climate change effects in western Zambia.
- In collaboration with ZEP, the research supported local capacity through environmental information sharing and the promotion of innovative spatial approaches to address health priorities beyond malaria (e.g., climate-related challenges to accessing health facilities).

Underpinning research enablers

Acknowledge the role of research networks in amplifying impact

- ***The value of academic and non-academic collaborations:*** Partnerships with established networks (e.g., ZEP), alongside work with MoH, embedded a collaborative approach among diverse researchers and policymakers for pre-grant discussions around health challenges. A strong focus on equitable partnerships fostered information sharing, aligning priorities, and leveraging collective expertise and evidence from different knowledge systems.
- ***Enhancing project's financial capacity and widening partnerships:*** Working alongside CAHG and ZEP allowed the project to tap into a wider pool of funding opportunities (e.g., UK and Canadian funds), expand the type of activities implemented, broaden the network of interdisciplinary and international collaborators, and support long-term partnerships.

Support research user involvement and ownership over research process and outputs

- ***Strengthening research applicability through transdisciplinarity:*** Active engagement with Zambian health officials, clinicians, and frontline workers provided detailed data into local health priorities. Lozi community leaders and people living in affected areas provided insights on the benefits and challenges of flooding, complementing climate change adaptation data and refining findings' relevance.
- ***Increased resources and effort from local partners:*** The MoH in Zambia invested significant resources into the research project, establishing a strong sense of ownership and commitment from the beginning. This Zambian-led collaboration facilitated smoother cooperation between international researchers and local stakeholders, maximising the project's potential impact.

Recognise the role of serendipity

- ***Taking advantage of emerging opportunities:*** Research benefitted from an unexpected and long conversation with a senior official from the district provincial health office. This provided detailed understanding of local priorities and shaped the project's research focus on the effects of flooding.

Performing Development: Progressing the United Nations Sustainable Development Goals (UN SDGs) in territories subject to multiple stress factors through collaborative arts-based research projects

UKCDR

Download case study

Lead	Queen Mary University
Panel	A - Medicine, health, and life sciences
UoA	33 - Music, drama, dance, performing arts, film, and screen studies
Location	Brazil, Colombia, Peru, UK
Funders	Arts and Humanities Research Council (AHRC), British Academy, Economic and Social Research Council (ESRC), Engineering and Physical Sciences Research Council (EPSRC), Leverhulme Trust, Medical Research Council (MRC)
Funds or grants	Global Challenges Research Fund (GCRF), Newton Fund, Research Networking Grants, UKRI Research and Innovation (UKRI) Responsive-Mode Funding, UKRI Special COVID-19 Grant
Partners	In **Brazil**: Federal University of Rio de Janeiro, People's Palace Projects (PPP) do Brasil, Redes da Maré

"We built new ways of working together. International academics carefully inserted themselves in the context and supported not only language translation, but also cultural, political, and methodological translation (...) and during the methodological construction process, we [*Redes da Maré*] didn't feel in a different position from the universities, we weren't just the object of research, but we affirmed ourselves as knowledge producers and disseminators"

LMIC-based researcher

Summary

In Low- and Middle-Income Countries (LMICs), communities subject to multiple stress factors face significant socio-economic challenges. People's Palace Projects (PPP), a research centre at Queen Mary University of London, co-created research practices with arts organisations in Latin America, developing arts and cultural practices as a resource for resilience, resistance, and recovery. Practice-led art methods connect knowledge production, practical experience, and local context. These methods empower community-based organisations in using local resources and cultural practices, thus expanding civil society's agency in progressing towards the UN SDGs, even in fragile contexts.

Key impact

Increased global awareness on the importance of protecting indigenous cultures

- Collaboration with the Kuikoro people in the Xingu Indigenous Territories (Brazil) highlighted their heritage and repositioned their culture through performances, multi-media installations, debates, and radio documentaries. PPP also mobilised support for the Kuikuro during the COVID-19 pandemic.
- Workshops with indigenous leaders, artists, policymakers, and academics on indigenous engagement in research partnership and knowledge mobilisation produced policy recommendations, influencing UKRI research guidelines.

Improved effectiveness of SDGs progress measurement

- 49 leading arts organisations in Brazil and the UK used PPP's toolkit on measuring cultural value, thus increasing their capacity to monitor progress towards social development, respond to specific challenges, and design independent research projects.
- The new practice-led art and transdisciplinary methodologies have been integrated into *Rumos*, Brazil's largest open-call arts program, benefiting a wider range of organisations and artists.

Establishment of arts-based mental health and wellbeing research networks across Latin America

- *Uma só voz/With One Voice Choir* showed positive wellbeing outcomes for homeless people in Rio de Janeiro and embedded the programme in the city's most popular museum.
- Partnership with *Redes da Maré* enabled a long-lasting art-based research collaboration that highlighted the benefits of co-creating research with community-based organisations. It revealed art's positive impact on residents' mental health and wellbeing amid urban violence in 16 favelas in Rio de Janeiro.
- Research collaboration expanded to Argentina, Brazil, Colombia, and Peru, forming research networks of art organisations to reduce mental distress risks in young people.

Underpinning research enablers

Encourage challenge-led interdisciplinary and transdisciplinary research

- ***Constructive funding schemes:*** Funding schemes that encouraged challenge-led and transdisciplinary approaches were crucial for the project's success. By creating an environment that fostered cross-pollination of ideas, the project leveraged the strengths of different disciplines (e.g., psychiatry, sociology, anthropology, and economics).
- ***Interdisciplinary synergies and thematic intersections:*** Collaboration between social scientists, artists, and civil society experts enabled exploration of the intersections of violence, poverty, mental health, geography, and the arts. This productive interdisciplinary synergy brought together different perspectives and helped to address understudied aspects, leading to valuable findings to improve favela residents' quality of life.

Acknowledge added value of relationships and lived experience

- ***Levering connections of civil society organisations:*** Partnerships with non-academic organisations based on mutual benefits and ethics helped ensure the quality of knowledge production. In Brazil, *Redes da Maré* accessed their existing social networks, facilitating robust data collection through transparent conversations with favela residents.
- ***Benefits of seeing on-the-ground experience:*** The curiosity and willingness of researchers and partners to immerse themselves in the lives and realities of the communities they study and engage with facilitated a more meaningful understanding of the local context and data, leading to relevant use in fragile territories.

Closing the global mental health gap: Integrating mental healthcare into primary care in Low- and Middle-income Countries

UKCDR

Download case study

Lead	King's College London
Panel	A – Medicine, health, and life sciences
UoA	4 – Psychology, psychiatry, and neuroscience
Location	Ethiopia, India, Nepal, Nigeria, South Africa, Uganda
Funders	Department for International Development (DFID)[1], European Commission (EC), Wellcome, National Institute of Mental Health (NIMH)
Funds and grants	For Programme for Improving Mental Health Care (PRIME) – DFID[2] Health Research Programme Consortia, for Emerging Mental Health Systems in LMICs (EMERALD) – European Union's Seventh Framework Programme, for Africa Focus on Intervention Research for Mental Health (AFFIRM) – NIMH Collaborative Hubs for International Research in Mental Health
Partners	In **Ethiopia**: Addis Ababa University, Mental Health Service User Association. In **India**: Public Health Foundation. In **Nepal**: Transcultural Psychosocial Organization (TPO). In **Nigeria**: University of Ibadan. In **South Africa**: University of Cape Town (Overall lead institution for PRIME and AFFIRM), University of KwaZulu-Natal. In **Uganda**: Makerere University. In **UK**: London School of Hygiene and Tropical Medicine (LSHTM). **International**: World Health Organisation (WHO)

"There was a genuine wish to involve service users meaningfully from the start, but sometimes research jargon or being part of a specialist group felt intimidating. And because of the stigma and long years of being not considered as a human being, it was very difficult for us to be vocal about our wishes. We touched base with the PI and Co-PI and requested more time to review proposals and reports and give our perspective. That boosted our self-esteem and empowered us to work in other areas."

LMIC-based research user

Summary

Although over 450 million people are affected by mental illness globally, there are big challenges in accessing treatment for people living in Low- and Middle-Income Countries (LMICs). This research explored the disparities in mental health care access between LMICs and HICs and how factors, including stigma, discrimination, and poverty, prevent those who need treatment from receiving it. Researchers worked with local partners in affected communities to explore effective ways for delivering evidence-based mental health care interventions. Following the success of the new approaches, several LMICs rolled out district and national mental health care plans. Research findings informed WHO guidance and training resources for non-mental health workers.

Key impact

Raising awareness on addressing mental health care access gaps

- A strong case for better evidence on mental health services and global access expansion supported a *Lancet Commission* on global mental health and sustainable development. The commission provided a blueprint to broaden the global mental health agenda in relation to promoting mental wellbeing, preventing mental health problems, and enabling recovery.
- Research informed the development of WHO's Mental Health Gap Action Program (mhGAP) to support mental health care training of non-specialist health workers in low-resource settings. The program, implemented in over 100 countries, includes intervention guidelines, an operations manual, and a community toolkit to contextualise and tailor guidance.
- In Nepal, success of the integrated district mental health care plan was rolled out nationally by the Ministry of Health and adapted for five other LMICs.

Developing evidence-based local interventions to scale-up mental health care

- PRIME initiative collaborated with community organisations and health care workers in demonstration district sites in Ethiopia, India, Nepal, South Africa, and Uganda to co-create and assess evidence-based mental health interventions in primary care. This yielded successful approaches like task-sharing in Ethiopia and community detection tools in Nepal, boosting use of mental health services.
- The EMERALD consortium scaled up community-based and integrated mental health care and created a United Nations OneHealth Tool module to assist countries in cost-benefit analyses of implementing mental health care plans.

Underpinning research enablers

Support research user involvement and ownership over the research process and outputs

- ***Expanding impact through users' active buy-in:*** High-level commitment by the Community Advisory Board in Ethiopia propelled the project's impact in working with homeless individuals with mental illness at the district level. Their dedicated collaboration and resources catalysed this workstream and deepened engagement with the homeless population.
- ***Stimulating grassroot organisations:*** Research continuously encouraged service users to identify and lead with their own solutions. While unanticipated, this approach enabled the development of a new district-level service user association in Ethiopia.
- ***Empowerment's ripple effect:*** EMERALD embedded activities to empower mental health service users from the outset, including their insights in decision-making, leading to increased confidence and representation in mental health services.

Address power imbalances in knowledge systems

- ***Recognising the input of local partners:*** This research focused on the need for proper recognition of all intellectual contributions. Ensuring authorship, acknowledgements, and/or financial compensation for research participation fostered equitable partnerships with local institutions and individuals. Service users became valued research partners, thus combatting stigma and extending their community work.

Acknowledge added value of relationships and lived experience

- ***Successful cross-sector collaborations:*** Academic and non-academic partnerships boosted trust and credibility in research findings and enabled research uptake. In Ethiopia, active involvement of local universities, national government, district health offices, and service user groups supported effective co-production and output buy-in.
- ***Engaging with 'hard-to-reach' communities:*** Service user involvement raised local awareness, enriched research relevance and applicability, and developed inclusive solutions for real-life, local problems, reducing disparities in access to research benefits.

Photo credit: Charlotte Hanlon

1 Replaced by the Foreign, Commonwealth and Development Office (FCDO).
2 ibid

Children Born of War: Empowering advocacy, enhancing wellbeing and changing their experiences in the present and the future

UKCDR

Download case study

Lead	The University of Birmingham
Panel	D – Arts and humanities
UoA	28 - History
Location	Canada, Vietnam, Haiti, Lebanon, Democratic Republic of the Congo, Uganda, Bosnia
Funders	Arts and Humanities Research Council (AHRC), European Commission, Volkswagen Stiftung, Wellcome Trust
Funding programmes	AHRC Network Grants, European Union (EU) Horizon (Marie Sklodowska Curie) Innovative Training Networks, Global Challenges Research Fund (GCRF), Partnership for Conflict, Crime and Security Research (PaCCS), Volkswagen Symposium Grant, Wellcome Trust Medical Humanities (seed funding)
Partners	In **Uganda**: Facilitation for Peace and Development (FAPAD)

"We (the children) were carrying our fathers' burdens and crimes. We did not tell their names to anybody because we would be judged. Through research, we were able to confront our past, stand together, and tell our story. Tell who we are, create a community, and reconcile with our community. We experienced self-love, and love for one another. I am no longer cancelled; I am a leader who is listened to and involved in community activities."

LMIC-based research participant

Summary

Children Born of War (CBOW) are children fathered by (foreign) soldiers and born to local mothers. They are born during or after armed conflict and often face significant stigma, discrimination and other childhood adversities. Engagement with CBOW in multiple countries deepened understanding of conflict experiences. The conceptualisation of their rights has helped inform United Nations (UN) policy changes. Audio-visual materials created by CBOW have increased visibility of their stories, helped positively shift self-perceptions, and supported reconciliation with their communities.

Key impact

Increased understanding and awareness of CBOW experiences

- Collaboration between academics across various disciplines, including public health, sociology, anthropology, and psychology, led to nuanced understandings of challenges faced by CBOW in different contexts. It also facilitated comparative analyses across time and locations.
- Engagement with media outlets raised international awareness of experiences of CBOW among public and policy audiences. In Haiti, Chile, and Uruguay, research findings and media spotlight contributed to relevant policy discussions.

Informing UN policies and practices

- Researchers engaged with two UN Secretary General Special offices to contribute to policies that provide better support for war-affected children. This included the Office for Children and Armed Conflict and the Office on Sexual Violence in Conflict.
- Using their findings, researchers worked with the Office of the Victims' Rights Advocate (OVRA) to improve UN responses to peacekeeper-perpetrated gender-based violence and sexual exploitation and abuse. Research also informed the rights-based approach to victim support at the UN Security Council Research and contributed to reshaping training for UN practitioners.

Improving relationships among CBOW and their communities

- CBOW participants expressed moving from feeling 'discriminated and rejected' to gaining 'new self-confidence' about expressing their personal stories, reflecting on common needs (e.g., on emotional, social, and legal issues) and advocating for better support.
- CBOW challenged stigmatisation and discrimination by developing cultural artefacts (e.g., docu-dance productions and a virtual game) that increased empathy within and beyond their communities.
- Research contributed to the development of new groups such as the Forgotten Children of War Association in Bosnia, which continues to deliver national and international advocacy work.

Underpinning research enablers

Recognise various forms of impact evidence

- ***Documenting unplanned impact:*** While not anticipated in the initial historical and anthropological research, the research process and outputs led to mental health benefits (e.g., increased self-esteem), community bonding (e.g., reconciliation between child soldiers and their victims, regained respect as leaders, and CBOW finding previously unknown family members). Written, video, and performance testimonials reflected the effects on personal, family, and community levels, strengthened a solid foundation of impact evidence, and increased chances of influencing policies, practices, and societal change.

Recognise the role of local intermediaries

- ***Benefits of equitable partnership:*** In Uganda, partnering with FAPAD, a local grassroots organisation, led to effective community engagement, improved contextual understanding, and support in recognising and exposing human rights abuses and the effects of the war among CBOW and their mothers. Throughout the project, FAPAD introduced key actors, mobilised networks, monitored local action for co-producing outputs, and flagged historical and socio-cultural sensitive elements.

Embed ethics around research funding and aims

- ***Care ethics at the forefront:*** Based on previous experiences of unethical research with CBOW, there was a risk of mistrust toward foreign researchers and low participation in the project. Genuine and sustained commitment to the participants (e.g., continued engagement and activity co-creation) facilitated trust-building and increased interest in the project, whilst also minimising the potential risk of psychological or social harm. Transparency regarding the research aims increased the research team's credibility. Caring conversations with parents and children ensured consent, confidentiality, and respect for autonomy and agency. CBOW participants highly valued the inclusion of their insights in research findings.

Driving sustainable urban waste policy and practice in India: Transdisciplinary research for an alternative waste management approach

UKCDR

Download case study

Lead	University of Sussex
Panel	C – Social sciences
UoA	17 - Business and management studies
Location	India
Funders	Economic and Social Research Council (ESRC)
Funds and grants	Social, Technological and Environmental Pathways to Sustainability (STEPS) Centre
Partners	In **India**: All India Kabadi Mazdoor Mahasangh (AIKMM) (waste picker association), Jawaharlal Nehru University, Toxic Links (non-governmental organisation - NGO), Lok Adhikar (waste picker association)

"We had our own research programme administrator who was full time and that made a huge difference, particularly in organising events and managing finances with partners. Another helpful thing was having a dedicated communication engagement and impact person who helped us to engage with diverse media outlets and create films, videos, and stories."

UK-based researcher

Summary

Poor waste management processes have led to considerable issues for urban populations, including negative effects spanning health, society, and environment, which are felt strongly by marginalised communities. In India, approximately 1.5 million informal waste pickers are involved in waste management. These individuals collect and sell recyclable materials, thus reducing waste disposal and greenhouse gas emissions. Researchers worked with Indian government officials, NGOs, industry professionals, and waste picker associations to understand the complexities of the urban waste management system. Together, they helped co-create more informed, inclusive, and sustainable waste management policies and inspired new practices in India.

Photo credit: Pritpal Randhawa

Key impact

Shaping national waste management policy and practices

- Research findings influenced national legislation, through a new manual on Municipal Solid Waste Management (MSWM). The new set of guidelines increased recognition of the informal waste picking sector, the role of decentralised recycling, the value of composting, and the need to address hazardous waste transfer to poorer areas.
- Following the new MSWM manual, the Municipal Corporation of Delhi (MCD) planned ten decentralised initiatives in both residential and commercial areas to process urban organic waste to generate high-quality manure.
- Based on transdisciplinarity and grassroot innovations, research findings spurred new approaches and practices in day-to-day waste collection and processing.

Promoting collaboration across different actors of the waste management system

- Research in Pune and Ahmedabad highlighted alternative waste management practices that link informal and formal sectors. Lessons shared from this experience encouraged discussions on waste pickers' inclusion in the system. They also facilitated unprecedented engagement between waste-picker associations and private companies, such as the Lok Adikhar union formal contract for waste segregation in Delhi.
- Success in Delhi encouraged community engagement and collaboration among local waste pickers and NGOs to address broader issues pertaining to social justice, health, and environment for poor and marginalised communities.
- Participatory workshops in waste picking associations strengthened bottom-up advocacy efforts. AIKMM, with over 100,000 members, advocated for traditional labour rights, addressing environmental issues, and working with the formal sector for wider benefit.

Underpinning research enablers

Encourage challenge-led interdisciplinary and transdisciplinary research

- ***Enabling an interdisciplinary environment:*** Collaboration between Jawaharlal Nehru University (JNU) and University of Sussex brought together the experiences, knowledge, and research agendas of different departments across both universities. Exploring socio-political and environmental dimensions of urban waste management enabled impact that cut across multiple Sustainable Development Goals (SDGs)and the co-production of robust recommendations.
- ***A long-term transdisciplinary approach for systemic change:*** A 20-year relationship with environmental NGO Toxic Links and ten years of work with two waste pickers' associations built strong equitable partnerships and anchored a transdisciplinary research approach. Capitalising on different priorities and perspectives, these relationships built a multi-layered strategy that bridged theory and practice. While researchers conducted interviews with government officials and shadowed waste pickers, NGO advocacy leaders gained participation in expert government committees.

Develop long-term academic collaborations

- ***Leveraging diverse expertise and experience:*** Long-term collaboration between JNU and the University of Sussex pooled UK and Indian expertise to create innovative waste management solutions that drew on findings and lessons from previous projects.
- ***Building cumulative knowledge and impact:*** Sustained focus and commitment to a shared agenda enabled researchers to delve deeply into multiple facets of waste management over an extended period, adding key insights and contributing to longer-term impacts.

Support project management and communication tasks

- ***Added value of administrative and communications support:*** Having dedicated project management support improved the reach of impact as it helped with project coordination, monitoring, evaluation, and reporting activities. Communications support identified relevant dissemination channels and helped create powerful stories to share findings and reflections that inspired change. research uptake.