
# UK RESEARCH FUNDING FOR DEVELOPMENT IN KENYA

## An analysis of funding and reach (2014-2019)

**Front cover image:**
Adegu David, District Meteorological Officer shows the scientific processes of gathering and monitoring data in Kisumu, Kenya. Credit: Thomas Omondi / DFID / International Development Research Centre

**This report was written by:**
Adrian Bucher[1], Sheila Mburu[1], Yaso Kunaratnam[1], Alice Cross[1,2], Callum Boyd[1,2], Adam Dinsmore[2], Marta Tufet[1]* & Alice Norton[1,2]*

1. UKCDR
2. Wellcome Trust
* Joint senior authors

# Table of Contents

# About UKCDR

The UK Collaborative on Development Research (UKCDR) is a collaborative of government and research funders working in international development, governed by the Strategic Coherence for ODA-funded Research (SCOR) Board. Our core contributing members include the Department for Business, Energy and Industrial Strategy; the Department for International Development; the Department of Health and Social Care; UK Research and Innovation; and Wellcome. UKCDR exists to amplify the value and impact of research for global development by promoting coherence, collaboration and joint action among UK research funders.

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

# Commission of this report

In November 2018, the SCOR Board commissioned UKCDR to carry out in-depth analyses on UK ODA-funded and Wellcome-funded research investments and partnership activities in Kenya, Nigeria and South Africa. These analyses will contribute to the UK's new commitment to partnership with African nations, announced by the former UK Prime Minister Theresa May in mid-2018. approach is expected to lead to a scale up of R&D coherence in these three countries led through new platforms bringing together teams from across government focused on science, technology and innovation (across the Science and Innovation Network, the Department for Digital, Culture, Media and Sport and the Department for International Development).

# Acknowledgements

We would like to thank all our members at BEIS, DFID, DHSC, UKRI and Wellcome.

This report has been produced by UKCDR in collaboration with the Insight and Analysis team at Wellcome. We would also like to specifically thank the below 8 international development research funders for their contribution to this analysis specifically by providing data as well as offering staff time to answer queries and quality control the findings.

- Academy of Medical Sciences
- British Academy
- Department of Health and Social Care (Global Health Research Team)
- Department for International Development
- Royal Society
- UK Research and Innovation
- UK Space Agency
- Wellcome

The report additionally benefitted from comments, feedback and further support from UKDCR's Officials Group, other members from Wellcome's Insight and Analysis team (Jonathan Best and Jessica Romo), other members of the UKCDR team (Henrike Grund, Nicole Huxley, Mimoza Murati and Rachel Miles) and representatives from the 14 organisations based in Kenya and the UK for engaging with UKCDR as part of the stakeholder interview and survey process. The project was managed by Adrian Bucher with support and oversight within UKCDR from Alice Norton and Marta Tufet.

# List of abbreviations and acronyms

| | |
|---|---|
| **AAS** | African Academy of Sciences |
| **AESA** | Alliance for Accelerating Excellence in Science in Africa |
| **Ag Sci** | Agricultural Sciences |
| **AHRC** | Arts and Humanities Research Council |
| **AIDS** | Acquired Immune Deficiency Syndrome |
| **AMS** | Academy of Medical Sciences |
| **ANZSRC** | Australian and New Zealand Standard Research Classification |
| **APHRC** | African Population and Health Research Centre |
| **AUDA-NEPAD** | African Union Development Agency - New Partnership for Africa's Development |
| **BBSRC** | Biotechnology and Biological Sciences Research Council |
| **BEIS** | Department for Business, Energy and Industrial Strategy (UK) |
| **D-MAG** | Data Mapping and Analysis Group |
| **DAC** | Development Assistance Committee |
| **DEFRA** | Department for Environment, Food and Rural Affairs (UK) |
| **DELTAS** | Developing Excellence in Leadership, Training and Science |
| **DEM** | Deep Election Monitoring |
| **DFID** | Department for International Development (UK) |
| **DHSC** | Department of Health and Social Care (UK) |
| **DORA** | San Francisco Declaration on Research Assessment |
| **EARH** | East Africa Research Hub |
| **Eng** | Engineering |
| **ENU** | Edinburgh Napier University |
| **Env Sci** | Environmental Sciences |
| **EPSRC** | Engineering and Physical Sciences Research Council |
| **ESRC** | Economic and Social Research Council |
| **EU** | European Union |
| **FCO** | Foreign and Commonwealth Office (UK) |
| **G8** | Group of Eight |
| **GCRF** | Global Challenges Research Fund |
| **GDP** | Gross Domestic Product |
| **GERD** | Gross Domestic Expenditure on Research and Development |
| **GFGP** | Good Financial Grant Practice |
| **GHP3** | Centre for Global Health Population, Poverty and Policy |
| **Hist & Arch** | History and Archaeology |
| **HIV** | Human Immunodeficiency Virus |
| **I & C** | Information and Computing Sciences |
| **ICIPE** | International Centre of Insect Physiology and Ecology |
| **KEMRI** | Kenya Medical Research Institute |
| **KMFRI** | Kenya Marine and Fisheries Institute |

| | |
|---|---|
| **KTN Africa** | Knowledge Transfer Network Africa |
| **KWTRP** | KEMRI Wellcome Trust Research Programme |
| **LMIC** | Low and Middle-Income Countries |
| **MRC** | Medical Research Council |
| **NERC** | Natural Environment Research Council |
| **NGO** | Non-Governmental Organisation |
| **NIHR** | National Institute for Health Research |
| **ODA** | Official Development Assistance |
| **OECD** | Organisation for Economic Co-operation and Development |
| **PCT** | Patent Cooperation Treaty |
| **PISCES** | Policy Innovation Systems for Clean Energy Security |
| **PWG** | Policy Working Group |
| **R&D** | Research and Development |
| **RAEng** | Royal Academy of Engineering |
| **RCR** | Relative Citation Ratio |
| **ReMPro** | Research Management Programme |
| **SCOR** | Strategic Coherence for ODA-funded Research |
| **SDG** | Sustainable Development Goal |
| **SIN** | Science and Innovation Network |
| **STFC** | Science and Technology Facilities Council |
| **STI** | Science, Technology and Innovation |
| **STISA** | Science, Technology and Innovation Strategy for Africa |
| **UK** | United Kingdom |
| **UKCDR** | UK Collaborative on Development Research |
| **UKRI** | UK Research and Innovation |
| **UN** | United Nations |
| **UNDP** | United Nations Development Programme |
| **UN REDD** | United Nations Programme on Reducing Deforestation and Forest Degradation |
| **USA** | United States of America |
| **USAID** | United States Agency for International Development |
| **WHO** | World Health Organization |

# Executive Summary

This report presents an analysis of the nature and reach of UK Official Development Assistance (ODA) and Wellcome funding for international development research and partnership activities in Kenya between 2014 – 2019, positioned within the wider profile of the Kenyan national research and innovation system.

The analyses provide a baseline of UK funding and collaboration intending to improve coherence and visibility of its investments to inform future activities under the UK Government's new and distinctive commitment to work alongside, invest in, and partner with African nations. This commitment, announced by former UK Prime Minister Teresa May in 2018, aims to establish long-term, meaningful and mutually beneficial partnerships. Alongside other areas of engagement, this will lead to a broadening and deepening of UK research and innovation investments and partnerships in Kenya. This investment will be led by the UK Government through hubs in various African nations, focused on science, technology and innovation.

UKCDR used multiple methods including portfolio-level, and global funding data analysis of UK ODA and Wellcome-funded projects, stakeholder interviews and bibliometrics to draw out high-level research trends and impacts. Key findings from the report include:

**The UK has a long history of research partnerships and is one of the largest international research funders in Kenya,** making it key to the Kenyan research ecosystem. UK ODA and Wellcome investment related to Kenya between 2014 – 2019 totalled £857.3m across 272 research projects. However, this is reduced to an estimated £164.4m after controlling for data limitations (multi-country awards were equally divided by the number of countries of focus). Research investments are varied – spanning all the United Nations' Sustainable Development Goals (SDGs) with strong focus on SDG 3: Good health and well-being, and projects are delivered through complex and diverse funding schemes.

**UK funding has supported many institutional collaborations between researchers in the UK, Kenya and beyond,** underpinned by several long-term investments. Notably, the Kenya Medical Research Institute-Wellcome Trust Research Programme in Kilifi, more recently the Alliance for Accelerating Excellence in Science in Africa (AESA) platform and long-term Department for International Development (DFID) funding. Project outputs include more than 3,656 publications (produced between 2017 and August 2019), the majority on medical and health sciences, biological sciences and studies in human sciences. Collated case studies and programme highlights demonstrate the global reach and diverse nature of the investment spanning mangrove conservation,

bioenergy access, democracy, and maternal and child-health.

**UK funding is closely aligned with Kenyan national research priorities facilitated by strong partnerships.** A flagship of UK-Kenya partnership is the Newton-Utafiti Fund, which enables joint priority setting, matched and in-country direct research funding. Kenya's Big Four Agenda and National Research Fund present opportunities for UK-funded research to expand across Kenyan national development priorities for further alignment, coherence and equitable partnerships.

**The UK Government's partnerships with Africa have an established and effective model in Kenya,** through the Joint UK-Kenya Oversight Board on Science, Technology and Research, the DFID East Africa Research Hub, and the UK Foreign & Commonwealth Office Science and Innovation Network. These mechanisms provide a strong base for future activities both in and with Kenya and replication in other countries.

# 1 Introduction

## 1.1 Purpose

The purpose of this report is to provide a summary and analysis of the nature and reach of UK Official Development Assistance (ODA) and Wellcome-funded research investments and partnership activities in Kenyan and contextualise these within the broader Kenyan national research and innovation system.

By providing a baseline of UK's investments this report aims to improve coherence and visibility, and to inform future UK activities in Kenya under the new and distinctive commitment from the UK to work alongside, invest in, and partner with African nations, announced by the former UK Prime Minister Teresa May, mid-2018[1].

This report is one of three produced by UKCDR, as commissioned by the Strategic Coherence for ODA-funded Research (SCOR) Board, examining the research investments and partnership activities in three African countries – namely Kenya, Nigeria and South Africa.

## 1.2 Scope

The report analyses quantitative and qualitative aspects of UK ODA-funded and Wellcome direct research and innovation investments and partnership activities committed over the last five financial years to provide a comprehensive overview of these investments, their reach and the partnerships involved. Additionally, the reports consider indirect, past (significant commitments that are still active) and pipeline commitments, where relevant. The report asks the following four questions (which were developed in consultation with UKCDR members):

- What is the total investment of UK ODA and Wellcome on research relating to Kenya?
- Where does UK research funding go?
- What is the potential impact of UK research funding?
- How do the investment extent and outputs from UK funding compare to other external funding to Kenya?

## 1.3 Setting the scene – The Kenyan research and innovation system

### Table 1 - Kenya country profile

| | Total | Country Ranking |
|---|---|---|
| Population (2019)[2] | 52,573,973 | 27/232 |
| Human Development Index (2018)[3] | 0.59 | 142/189 |
| GDP per capita (2018)[4] | $1,710.50 | |
| Life expectancy at birth (years) 2017[5] | 67 | |
| DAC list classification[6] | Lower Middle-Income Country | |

Kenya's economy is among the fastest-growing in Africa with a reputation for innovation in financial services, telecommunications, digital and renewable energy which have significantly impacted the lives of millions across the region[7]. Despite this progress, over 16 million Kenyans still live below the national poverty line[8]. Though Kenya's growth is positive, political, climatic and security shocks affect its ability to grow, and keep the poorest and most marginalised in extreme poverty[9].

### Table 2 - Key statistics on research and innovation in Kenya

| | Kenya |
|---|---|
| RESEARCH | |
| Researchers in R&D per million people 2010[10] | 225 (rank 76/129) |
| R&D score in Global Innovation Index 2019[11] | 5.5 (rank 76/129) |
| Research and development expenditure (% of GDP) 2010[12] | 0.79 (rank 45/129) |
| Target spend on R&D (% of GDP)[13] | 2.0 |
| Quality of scientific organisations[14] | 4.3* (rank 45/137) |
| Availability of scientists and engineers[15] | 4.5* (rank 41/137) |
| OUTPUTS/PUBLICATIONS[16] | |
| Total number of publications 2018 (citable publications) | 3,209 (2,840) |
| Total number of publications 1996-2018 (citations per publication) | 35,120 (18.59) |
| H-Index | 233 (rank 54/239) |
| Percentage of outputs that are Open Access (2018) | 46.0% (1477 docs) |
| Output as a percentage of Africa (2018) | 4.18% |
| Output as a percentage of the world (2018) | 0.1% |
| COLLABORATION | |
| International collaboration 2018 (% of total) | 80.87% |
| University-Industry collaboration (score/ranking)[17] | 4.3* (rank 32/137) |
| INNOVATION | |
| Country position in Global Innovation Index 2019[18] | 77 |
| Capacity for innovation (2017-8)[19] | 4.7* (rank 38/137) |
| Global competitiveness index | 4.0* (rank 91/137) |
| PCT patents (applications/million pop) | 0.2 (rank 90/119) |

*Denotes scores based on a 1-7 scale as calculated by the World Economic Forum

## 1.4 Kenyan research policy and funding

Kenya has put science and innovation at the heart of its national development strategy. Kenya Vision 2030, the country's long-term development plan, recognises the critical role played by research and development in accelerating economic development[20]. In 2013, the government passed the National, Science, Technology and Innovation Act, which mandates an increase of gross domestic expenditure on research and development (GERD) from 0.7% of GDP in 2010 to 2% (aligned with the wider commitment of African Union members)[21] and an increase in infrastructure spending[22].

Kenya is the predominant research hub in East Africa but relies heavily on international funding. 47% of Kenya's GERD comes from international funders[23]. The government is in the process of reviewing the national science, technology and innovation policy and has a Sector Plan for Science and Technology (2013-17)[24]. The Universities Act of 2012 legislates that production and dissemination of scholarly research and the promotion of innovation are two key objectives of universities[25].

Kenya's National Research Priorities 2018-2022 is a five-year plan focusing on the government's *'Big Four Agenda'* on f**ood and nutrition security, manufacturing, housing** and **universal health coverage**. It is anchored on international commitments including the Sustainable Development Goals (SDGs), the Science, Technology and Innovation Strategy for Africa (STISA) 2024 and the African Development Agenda 2063. The overall goal is to increase productivity, achieve sustainable economic growth, create employment, promote equity and improve the national well-being[26].

## 1.5 Kenyan research landscape and stakeholders

Kenya hosts 225 full-time researchers per million inhabitants (Table 2), lower than South Africa (493 per million) but much higher than neighbouring countries. Approximately 1 in 4 researchers are female (25.7%) which is below the average for Sub-Saharan Africa (31.3%)[27].

### Table 3 - Key actors in Kenya's research system[28]

| Type of stakeholder | Stakeholders |
|---|---|
| **Ministries** | **Ministry of Education** sets and implements the research policy.<br><br>**Ministry of Agriculture, Livestock and Fisheries**, the **Ministry of Health** and the **Ministry of Industry, Trade and Cooperatives** play a role in commissioning specific research projects.<br><br>**Ministry of Information, Communications and Technology** |
| **National research policy and funding** | Four organisations oversee national research coordination, priority-setting and funding decisions:<br>• **National Commission for Science Technology and Innovation**<br>• **Advisory Research Committees**<br>• **Kenya National Innovation Agency**<br>• **National Research Fund** |
| **Research organisations** | 31 public universities and 30 private institutions, and a high number of think tanks and several private research institutes undertaking research.<br><br>10 research institutes and several international research organisations including **CGIAR**, **International Centre of Insect Physiology and Ecology** and several institutions conducting research in life and health sciences[29]. |
| **Research intermediaries** | **African Academy of Sciences**, the **Inter-University Council for East Africa**, the **African Capacity Building Foundation** and the **African Development Bank**. |
| **International funders** | Kenya's main research partners are the USA, the UK, South Africa, Germany and the Netherlands. There are nine active UK funders in Kenya. Other top international funders into Kenya include the **Bill & Melinda Gates Foundation**, the **Rockefeller Foundation**, the **Clinton Foundation**, the **Centres for Disease Control and Prevention**, the **National Institutes of Health**, and the **European Commission**. |

## 1.6 Research collaboration and innovation

Kenya maintains a high level of international collaboration (Table 2) as well as university-industry research and development (R&D) collaborations. The World Economic Forum ranks the country's innovation capacity highly and Kenya is becoming a leader in information and communications innovation in Africa with examples of world-class innovations emerging out of Kenya, such as the commercialising of mobile money M-PESA[30]. Kenya, however, is ranked lower in terms of global competitiveness.

## 1.7 Kenyan scientific outputs

Table 4 shows the ten most popular research topics of all documents published in Kenya in 2018. Notably, the top two areas were in medicine and agricultural and biological sciences which align with priorities under the Big Four Agenda. The country has a high production of academic literature, compared to other Sub-Saharan countries, equating to 0.1% of global output, ranking 72nd worldwide and 7th among all African nations (Table 2).

**Table 4 - Top 10 subject areas of Kenyan research thematic areas**

| Rank | Subject area | Percentage of published documents (2018) |
|---|---|---|
| 1 | Medicine | 27.2% |
| 2 | Agricultural and Biological Sciences | 16.7% |
| 3 | Social Sciences | 9.1% |
| 4 | Environmental Science | 8.9% |
| 5 | Biochemistry, Genetics and Molecular Biology | 7.4% |
| 6 | Immunology and Microbiology | 4.9% |
| 7 | Engineering | 3.3% |
| 8 | Earth and Planetary Sciences | 2.3% |
| 9 | Computer Science | 2.2% |
| 10 | Energy | 1.8% |

Source: Scimago

## 1.8 UK Government partnership in Kenya

### UK funding and partnership strategies Kenya

- DFID's East Africa Research Hub (EARH) was established in 2013 in Nairobi to support DFID country offices to use evidence and strengthen knowledge systems. Covering eight countries, EARH supports the generation and use of evidence by DFID's Eastern Africa country programmes; the development of research programmes that address key regional priorities; and research system development in the region. EARH also engages with wider UK support for science and research in East Africa.

- UK has a Science and Innovation Network (SIN) Officer in Kenya, based at the British High Commission in Nairobi. They work closely with other UK partners to strengthen UK's research footprint, promote evidence-based policy making and develop high-quality and sustainable UK-Kenya science and innovation partnerships that focus on UK and Kenyan priorities.

- On July 19 2016, the UK and Kenya formally launched the Newton-Utafiti fund, sitting with SIN. On the UK side, the Newton Fund is administered by the Department for Business, Energy and Industrial Strategy (BEIS) while on the Kenyan side, the Ministry of Education is the lead agency.

- The Department for International Trade offers expertise and contacts through its extensive network of specialists in the UK and helps companies in Britain increase their competitiveness through overseas trade in Kenya through offering professional, authoritative and personalised assistance to help companies in Kenya locate and expand in the UK.

- The British Council delivers a range of relevant science and education-focussed activities such as researcher links and workshop grants for scientists.

- Wellcome and DFID fund the Alliance for Accelerating Excellence in Science in Africa (AESA) initiative in Kenya (see Box 3).

- Among Wellcome's five major research programmes in Africa and Asia is the KEMRI-Wellcome Trust Research Programme (KWTRP) in Kenya which conducts research on the major causes of morbidity and mortality in the region to provide the evidence base to improve health, focusing on respiratory diseases, malnutrition, reproductive health and HIV/AIDS (see Box 2)

- In 2018, a new UK-Kenya High Level Oversight Board in Research, Science and Innovation was established. It is co-chaired by the Cabinet Secretary Minister of Education in Kenya, and the British High Commissioner to Kenya. The Board provides a platform to foster dialogue across both countries on the role of research and aims to provide a more holistic picture of the UK offer on science, innovation and technology. It supports HMG's efforts to centralise UK's science, technology and innovation offer as part of the strategic approach to partnerships with Africa.

- Supporting the Oversight Board, UKCDR produced a paper to explore the range of UK research investments in Kenya on affordable housing, as the evidence base on housing was viewed as weak compared to other priority areas under the Big Four Agenda.

- In May 2019, the Kenyan and UK governments hosted the UK-Kenya Research Symposium on 'Healthy Cities: Affordable Housing & Sustainable Infrastructure' in Nairobi, supported by UKCDR and GCRF. It aimed to broker dialogue across sectors towards the adoption of housing policies that promote sustainable development and showcased the strong partnerships between the UK and African stakeholders that are delivering innovations that will benefit us all.  A joint statement signed by the UK and Kenyan governments at the symposium renewed the commitment for continued partnership and research collaboration on affordable housing and sustainable infrastructure research, policy and practice in Kenya.

# 2 Methodology overview

(Full methodology breakdown can be found in Annex 2, available in the supporting document (Annex 2-8) on the UKCDR website)

All methodologies, scope and design were developed collaboratively by the UKCDR team and UKCDR members.

To understand the extent and impact of UK ODA and Wellcome research funding in Kenya, this report asks four questions, presented in the scope. To address these questions, this report makes use of a combination of the following quantitative and qualitative tools:

## 2.1 Portfolio-level analysis

Data on research funding awarded between 2014-2019 were collected from DFID, BEIS, DHSC (collectively accounting for more than 95% of the total ODA research budget)[31] and Wellcome (Table 5). This timeframe was selected as many of these organisations would not have been allocated ODA funds prior to FY 2014/15.

**Table 5 - List of funders with data included in the portfolio-level analysis of UK ODA-funded and Wellcome funded research projects relating to Kenya**

| Funder |
|---|
| **Department for Business, Energy and Industrial Strategy** (BEIS)* via delivery partners†:<br>• Academy of Medical Sciences<br>• British Academy<br>• Royal Society<br>• UK Research and Innovation<br>• UK Space Agency |
| **Department for International Development (DFID)*** |
| **Department for Health and Social Care (DHSC)*** |
| **Wellcome** |

* indicates data obtained from ODA-funded research

†Non-extensive list of BEIS-delivery partners for ODA-funded research

### 2.1.1 Data limitations from portfolio-level analysis

There are two important considerations regarding the analysis of the data from this component:

- Though the funded research projects address issues relevant to Kenya, most grants were awarded to UK institutions which in turn disburse funds to in-country partners. It is not possible from the data to determine exact funding to Kenyan institutions. Therefore, the awarded grant amounts do not reflect funds that the UK sends to Kenya. Rather, it reflects investments in research related to Kenya.

- The majority of the included research projects (66%) have multiple countries of focus and it was not possible to disaggregate spend per individual country from the data provided. To correct for this, most of this analysis will equally divide individual grant amounts by the total number of nations listed as a country of focus when presenting financial information. While such an assumption is imperfect, accounting for this helps to frame our understanding of the true underlying size of UK investments into research relating to Kenya. This technique was agreed to by the funders included in the portfolio-level analysis.

## 2.2 Stakeholder interviews

While the analysis of portfolio-level data is vital to understand the extent and impact of UK ODA research funding in Kenya, important elements of the STI relationship between the two countries would otherwise be missed should the analysis employ purely quantitative tools. To that end, interviews with 14 stakeholders based in the UK and Kenya were conducted to add insight on the perceptions of this relationship. These stakeholders were from the following three groups:

- Research funders based in both Kenya and the UK

- Research providers (including research institutions)

- Wider stakeholders of importance (including policy makers)

### 2.2.1 Limitations of stakeholder interviews

The views expressed in the responses received serve as a starting point to understand the perceptions and impact of UK research funding in Kenya and should not be considered to embody the general views of the groups which those stakeholders represent. This is due to two main reasons:

- The small number of stakeholders interviewed. Only 6 in-country respondents were included (3 interviewed and 3 surveyed) and 8 UK funders were surveyed. Given this small sample size these findings are not generalisable across all the stakeholder groups represented by respondents;

- UK funders being asked questions relating to the perceptions and impact of

UK research funding in three different African countries collectively (though every attempt has been made to extract and present the responses relevant to Kenya - including those that were more generalised across three countries)

## 2.3 Bibliometric analysis

A bibliometric analysis was used to provide a statistical overview of the publication outputs arising from investments and their resulting collaborations.

UKCDR fully acknowledges that assessments of scientific research output must encapsulate more than just publication and citation metrics, as stated in the San Francisco Declaration on Research Assessment (DORA), which is among the reasons why this bibliometric analysis comprises one of five different components of this report.

Data were sourced from Dimensions– an online subscription-based platform that collates information on grants, publications, citations, alternative metrics, clinical trials, patents and policy documents from more than 350 public and private research funders from 39 countries. A complete list of funders whose data is available on this platform can be found in Annex 5. Several bibliometrics platforms (such as Web of Science and European Pub Med Central) were considered, but Dimensions was selected chosen due to its superior coverage and the completeness of its data.

The data features publications from between 2017 and August 2019, assuming a three-year time-lag between the time of funding and the time of publication, in alignment with the timeframe used for the portfolio-level analysis.

### 2.3.1 Data limitations from bibliometric analysis

Important considerations regarding data from Dimensions:

- Dimensions does not allow for the filtering of research projects with an international development focus or those that are ODA funded in an automated way. This component therefore makes use of data for any research project related to Kenya – regardless of whether they have an international development focus or are ODA funded;

- At present, DFID data is not routinely collected by Dimensions, and, due to difficulties in identifying alternative and robust methods of identifying publications acknowledging DFID funding, the decision was made not to include DFID in this component. As DFID are a significant and historical funder of international development research (representing approximately one third of the UK government's total ODA R&D budget between 2016/17 and 2020/21)[32], it is acknowledged that the publications identified for this period are underestimated;

- Citation measures, most notably the Relative Citation Ratio (RCR), were not included in this component as this information is generally collected two years after publication. Given the date range for this component, as mentioned above, only 24% of the data showed provided an RCR, all of which were publications from 2017.

## 2.4 Analysis of global funding data

To contextualise the magnitude of these investments at a global level, they were compared to those made by funders from other countries on research relating to Kenya over the same period. Similar to the bibliometric analysis, a summary of statistics with data obtained from Dimensions was used.

### 2.4.1 Data limitations from analysis of global funding data

As the same source of data as the bibliometric analysis is used, it is subject to some of the same limitations outlined in Section 2.3.1 - namely the need to incorporate data from all research projects relating to Kenya (due to the lack of an automated method to identify research projects with an international development focus or those that are ODA funded) and the absence of data from certain research funders – such as DFID.

There are, however, additional considerations more relevant to this component:

- Of the 354 funders (public and private) with data on the Dimensions database, 154 (43.5%) are based in the United States - potentially skewing the results to show a greater proportion of research investments coming from the USA than may necessarily be the case. Importantly, it is the completeness of a given country's research funding landscape captured by the Dimensions database that determines the extent of the over/underestimation of the proportion of that country's contribution to research investments on projects relating to Kenya.

- As this component handles grant information in a similar way to the portfolio-level analysis of UK ODA-funded and Wellcome-funded research projects (outlined in Section 2.1), projects with multiple countries of focus listed on the OECD's Development Action Committee (DAC) list are subject to having their grant amounts equally divided by their respective total number of DAC-listed countries of focus for the same reasons outlined in Section 2.1.1.

## 2.5 Case studies and programme highlights

Case studies add depth to the analysis, giving insights into the impact of ODA/Wellcome research funding has had on the lives of Kenyan beneficiaries, and programme highlights demonstrate the diverse nature of UK investments. The information on the projects and investments profiled in the case studies and programme highlights were obtained from UKCDR members and stakeholders, who nominated the projects and investments for inclusion (Annex 7) and desk-based research. The report also features case studies and programme highlights that fall outside of 2014 - 2019, to not exclude those longstanding UK research investments whose impacts are still being realised to this day. Additionally, research projects often require several years before they reach their respective impact stage.

# 3 Findings

## 3.1 What is the total investment of UK ODA and Wellcome on research relating to Kenya?

Since April 2014, the UK Government departments with the largest ODA research budgets (DFID, BEIS and DHSC) and Wellcome have invested a total of £857.3m in 272 projects that listed Kenya as one of the countries of focus (Table 6). This figure is reduced to an estimated £164.4m after correcting for multiple countries of focus (using the method as outlined in Section 2.1.1).

BEIS accounts for both the greatest amount of funds and number of research projects, although typically smaller (Figure 1) and shorter awards (Table 6) compared to other funders, particularly when account for multiple countries of focus - BEIS (estimated £372.8k), DFID (estimated £1.9m), DHSC (estimated £703.6k) and Wellcome (estimated £703.5k).

**Table 6 - Research projects relating to Kenya funded by UK ODA and Wellcome (initiated between FY 2014/15 – 2018/19)**

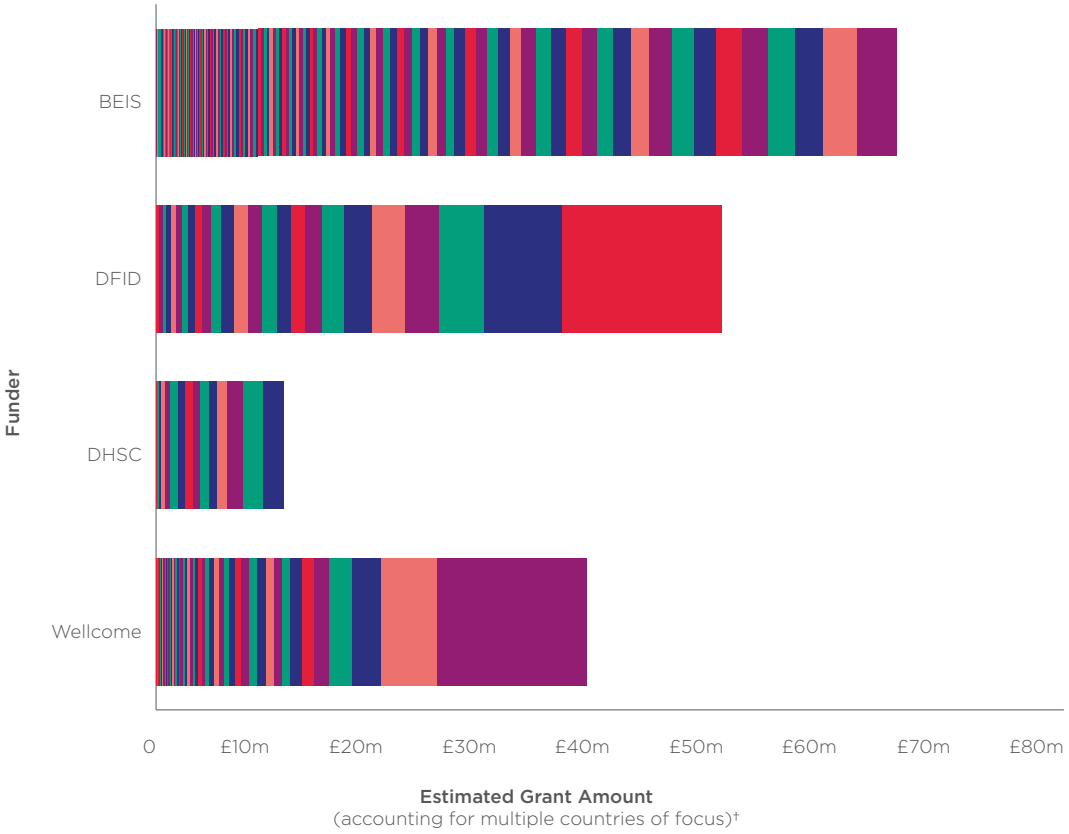
| Funder | No. of research projects | Total grant amount awarded* | Estimated total grant amount awarded (Correcting for multiple countries of focus) † | Average duration of research project (months) |
|---|---|---|---|---|
| BEIS | 176 | £199.4m | £65.2m | 26 |
| *AMS* | *8* | *£274.0k* | *£79.5k* | *15* |
| *British Academy* | *9* | *£2.5m* | *£1.5m* | *22* |
| *Royal Society* | *17* | *£5.1m* | *£2.9m* | *31* |
| *UKRI* | *136* | *£160.7m* | *£50.6m* | *27* |
| *UKSA* | *6* | *£30.8m* | *£10.1m* | *39* |
| DFID | 26 | £540.5m | £49.9m | 73 |
| DHSC | 16 | £46.6m | £11.3m | 39 |
| Wellcome | 54 | £70.7m | £38.0m | 39 |
| **Total:** ODA only | **218** | **£786.6m** | **£126.4m** | **33** |
| **Total:** ODA and Wellcome | **272** | **£857.3m** | **£164.4m** | **34** |

Totals may not add up due to rounding.

*Figures presented in this column reflect the total grant amount of research projects without taking into account research projects having multiple countries of focus.

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

**Figure 1 - Estimated size of individually-awarded grants accounting for multiple countries of focus† by UK ODA research funders and Wellcome on research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

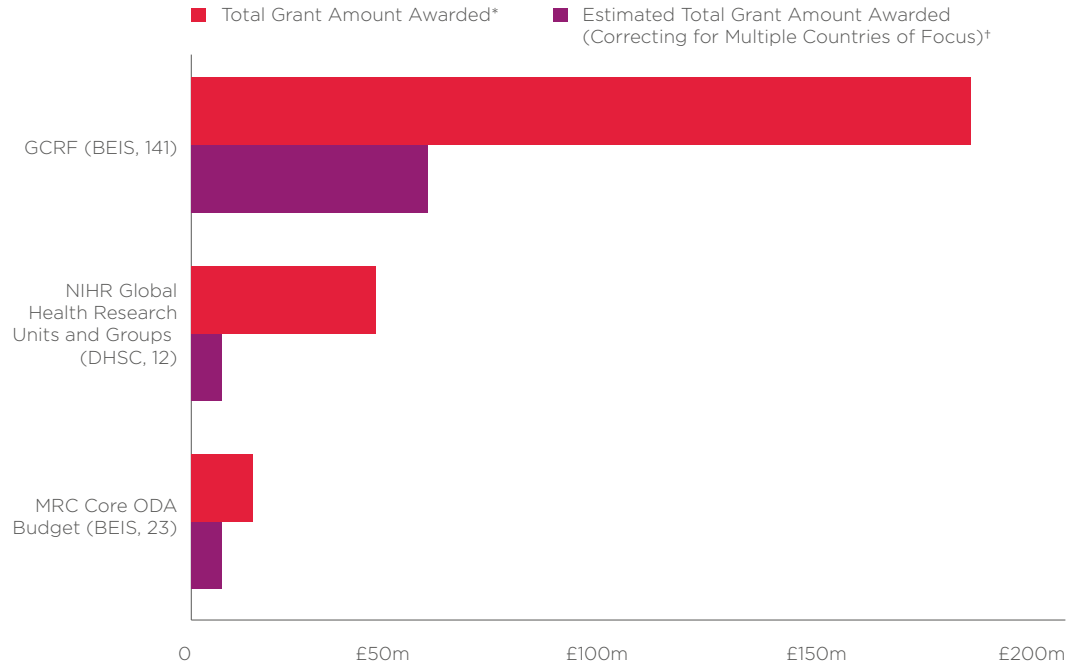



Grants are Displayed in Size Order.

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

Figure 2 presents the three most prominent ODA-funded research programmes (programmes awarding in excess of £10m of ODA on research projects). It is worth noting that, though not included in Figure 1, nine projects were funded under BEIS' Newton-Utafiti Fund totalling £6.0m (£3.5m after accounting for multiple countries of focus) – a program whose key characteristics includes matched resources provided by partner countries.

## Figure 2 - Major UK ODA funding programmes that have awarded at least £10m to research relating to Kenya (initiated between FY 2014/15 – 2018/19)




(Funder and number of projects indicated in brackets)

*Figures presented on the total grant amount of research projects do not take into account research projects having multiple countries of focus.

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

### Box 1 - Historical DFID funding on research relating to Kenya

The launch of the Newton Fund in 2014/2015 introduced a number of funders to the ODA research space.

Prior to this, ODA-funded research had largely been administered through DFID who since December 2007 funded, a total of **38 research projects** worth **£727.8m** (estimated £79.8m when accounting for multiple countries of focus), all of which are still active.

This includes a £50m allocation (estimated £6.25m to Kenya accounting multiple countries of focus) towards the Climate and Development Knowledge Network to improve access to the latest high-quality, reliable, and policy-relevant information on climate change in low-and-middle-income countries (LMICs). Technical assistance, research, knowledge management, and partnerships support policy-makers and practitioners in LMICs plan and implement strategies that meet climate change challenges of their respective countries.

## Box 2 - Programme Highlight: KEMRI|Wellcome Trust Research Programme

Kenya Medical Research Institute (KEMRI) |Wellcome Trust Research Programme (KWTRP) is a Wellcome-funded research unit that was set up in 1989, in partnership with the University of Oxford. Today, the programme supports over 100 research scientists and 700 support staff working across Kenya, Uganda and the east African region.

KWTRP conducts research on the major causes of morbidity and mortality in the region to provide the evidence base to improve health, focusing on respiratory diseases, malnutrition, reproductive health, and HIV/AIDS. KWTRP conducts integrated epidemiological, social, laboratory and clinical research in parallel, with results feeding into local and international health policy. The programme is well known internationally for its work on malaria and other infectious diseases, particularly bacterial and viral childhood infections.

KWTRP has a particular strength in community and public engagement, notably where it integrates with ethics and social science work. They also have a well-developed schools engagement programme which has been piloting innovative online methods.

KWTRP places strong emphasis on research capacity strengthening. The programme trains an internationally competitive cadre of Kenyan and African research leaders to ensure the long-term development of health research in Africa.

## Box 3 - Programme Highlight: The Alliance for Accelerating Excellence in Science in Africa (AESA)

The Alliance for Accelerating Excellence in Science in Africa (AESA) is an agenda-setting and funding platform that was set up in 2015. AESA was established to address Africa's health and development challenges and foster mentorship and collaborations in science, with policymakers and through public engagement. Its mission is to catalyse investments, strategies and programmes that promote the brightest minds in Africa, foster scientific excellence, inspire research leadership and accelerate innovation in ways that will improve lives and shift the centre of gravity for African science to Africa.

AESA is the programmatic arm of the African Academy of Sciences (AAS), based in Nairobi. AESA delivers 12 major science, technology and innovation programmes and strengthens research capacity through high quality research management, in-country leadership, mentorship, and training opportunities. Notably, AESA delivers the Developing Excellence in Leadership, Training and Science (DELTAS) Africa programme, Grand Challenges Africa, and Good Financial Grant Practice (GFGP) amongst others. DELTAS is a capacity building programme developing research leaders through a consortium of 54 partner institutions across Africa. GFGP involves the development of a new, internationally standardised system for the financial governance of grant funding.

AESA is jointly funded by Wellcome, the Bill and Melinda Gates Foundation, and DFID, and is an initiative of the African Union Development Agency - New Partnership for Africa's Development (AUDA-NEPAD).

### 3.1.1 Non-funding connections

In addition to UK ODA and Wellcome funding, some in-country stakeholders highlighted European Union (EU) funding, specifically EU Horizon 2020, as a non-UK funded scheme which includes the UK and Kenya as partners. Another stakeholder expressed a willingness to explore further non-funding connections with the UK, such as those centred on the environment and deforestation.

## 3.2 Where does UK Research funding go?

### 3.2.1 Lead Institutions

The estimated £164.4m of research grants, accounting for multiple countries of focus (Table 6), was awarded to 83 different lead institutions – of which an estimated £99.3m (60.4%) was awarded to 51 institutions based in the UK. This includes nine of the ten lead institutions awarded with the most funding on research projects related to Kenya (Table 7). As mentioned in Section 2.1.1, funds awarded to lead institutions in the UK may be disbursed to partner institutions (including those in Kenya).

**Table 7 - Top 10 lead institutions awarded the most estimated funds accounting for multiple countries of focus† by UK ODA research funders and Wellcome on research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

| Rank | Institution (country) | Estimated total grant amount awarded (correcting for multiple countries of focus)† |
|---|---|---|
| 1 | University of Oxford (UK) | £36.5m |
| 2 | Liverpool School of Tropical Medicine (UK) | £6.5m |
| 3 | University of Warwick (UK) | £5.1m |
| 4 | University of Leeds (UK) | £4.8m |
| 5 | London School of Hygiene and Tropical Medicine (UK) | £4.4m |
| 6 | Imperial College London (UK) | £4.1m |
| 7 | KWTRP (Kenya) | £3.9m |
| 8 | Avanti Communications (UK) | £3.5m |
| 9 | University of Edinburgh (UK) | £3.2m |
| 10 | University of Liverpool (UK) | £2.5m |

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

*Kenya Medical Research Institute

It should be noted that the University of Oxford's position as the institution receiving the most funds to conduct research relating to Kenya (Table 7) is driven by their long-standing partnership with Wellcome (see Box 2). Between 2014/15 – 2018/19 Oxford was awarded an estimated £25.1m of funding (after accounting for multiple countries of focus), the majority of which is passed onto the KWTRP.

### 3.2.2 Kenyan Institutions

Beyond the lead institutions, 329 institutions from 49 countries have been involved with the 272 research projects relating to Kenya included in this analysis (Figure 3). Of these institutions, 47 are based in Kenya with KEMRI ranking first among all other research institutions based in the African nation (Table 8) and second globally behind the University of Oxford.

**Figure 3 - Location of institutions involved with UK ODA-funded and Wellcome-funded research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

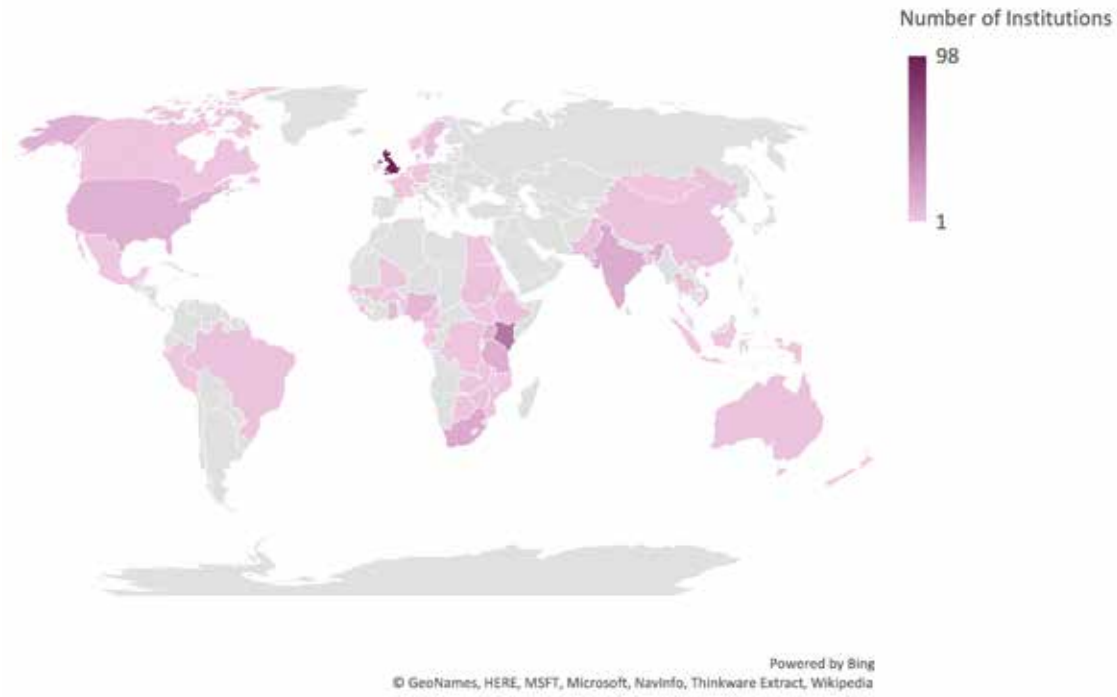


**Table 8 - Top 10 Kenyan institutions involved with the greatest number of UK ODA-funded and Wellcome-funded research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

| Rank | Institution | No. of projects |
|---|---|---|
| 1 | KEMRI | 38 |
| 2 | KWTRP | 23 |
| 3 | African Population and Health Research Centre | 18 |
| 4 | University of Nairobi | 17 |
| 5 | Moi University | 7 |
| = 6 | International Livestock Research Institute | 6 |
| = 6 | Kenyatta University | 6 |
| = 6 | Strathmore University | 6 |
| 9 | International Centre of Insect Physiology and Ecology | 5 |
| = 10 | African Institute for Development Policy | 4 |
| = 10 | British Institute in Eastern Africa | 4 |
| = 10 | Egerton University | 4 |

### 3.2.3 Institutional linkages

Collaboration is a priority of research programmes offered by funders to address key challenges faced by LMICs. The advantages of such collaborations are well-documented, such as the opportunity for researchers to exchange experiences, debate academic ideas and support research capacity strengthening practices. Therefore, although this analysis focuses on research that benefits people and policy-makers in Kenya, academic institutions in the UK (and other related stakeholders) should also be considered as among the beneficiaries of these research projects.

Of the 329 institutions involved with the research projects included in the portfolio-level analysis, Table 9 presents the ten most common collaborations between two institutions on UK ODA-funded and Wellcome funded research projects relating to Kenya. The pairings presented in Table 9 list the most common collaborations between any two institutions that were listed as either a lead institution or the location of any of the co-investigators for a given research project.

**Table 9 - Most common collaborations between two institutions on UK ODA-funded and Wellcome-funded research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

| Rank | Institutions | No. of collaborations |
|---|---|---|
| 1 | KEMRI and University of Oxford | 15 |
| 2 | London School of Hygiene and Tropical Medicine and University of Oxford | 9 |
| 3 | KEMRI and Liverpool School of Tropical Medicine | 8 |
| =4 | London School of Hygiene and Tropical Medicine and Kenya Medical Research Institute<br>University of Oxford and KEMRI-Wellcome Trust Research Programme | 7 |
| 6 | KEMRI and Makerere University | 6 |
| =7 | African Population and Health Research Centre and Loughborough University<br>London School of Hygiene and Tropical Medicine and University College London | 5 |

As a measure for the type of opportunities that UK research funding affords to institutions based in LMICs for collaboration, Table 10 highlights the most common collaborations between any two institutions based in LMICs, including institutions in Kenya, Cameroon, Ethiopia, Gambia, Malawi, Nigeria, South Africa, Tanzania, and Uganda.

**Table 10 - Most common collaborations between two LMIC-based institutions on UK ODA-funded and Wellcome-funded research projects relating to Kenya (initiated between FY 2014/15 – 2018/19)**

| Rank | Institutions | No. of collaborations |
|---|---|---|
| 1 | Kenya Medical Research Institute and Makerere University | 6 |
| =2 | African Population and Health Research Centre and University of Ibadan | 4 |
| | Kenya Medical Research Institute and KEMRI-Wellcome Trust Research Programme | |
| =4 | Addis Ababa University and Douala General Hospital | 3 |
| | African Population and Health Research Centre and University of Malawi | |
| | African Population and Health Research Centre and University of the Witwatersrand | |
| | Makerere University and National Institute for Medical Research | |
| | Makerere University and Catholic University of Health and Allied Sciences | |
| | Kenya Medical Research Institute and Kilimanjaro Clinical Research Institute | |
| | Kenya Medical Research Institute and National Institute for Medical Research | |
| | Kenya Medical Research Institute and Strathmore University | |
| | Kenya Medical Research Institute and University of Cape Town | |
| | Kenya Medical Research Institute and University of Nairobi | |
| | University of Malawi and University of Nairobi | |

### 3.2.4 Issues and opportunities linked to funding distribution

There was a consensus among the UK and Kenyan stakeholders interviewed that there exists an uneven distribution of research funding across different Kenyan institutions - with most research going to researchers at a small group of leading institutions (Table 8). Three reasons were highlighted to explain this:

- **Long-standing relationships with UK funders and institutions** – especially in those instances where there is an alignment between the topics of interest between stakeholders in both countries;
- **Better research management capacity** – this includes robust financial and research management systems;
- **Better skilled researchers and greater research competency** – in particular, those institutions employing highly-skilled staff with a strong track record of high-quality research and proposal-writing skills and experience applying for funding through UK systems.

The Government of Kenya has stated that they are keen for those universities with fewer resources to receive more funding and support. One UK funder mentioned that funding is based on competition and excellence rather than equity and may therefore result in 'excellent' researchers from 'weaker' institutions being less likely to make successful funding applications due to having less support and experience.

It was acknowledged that that progress has been made towards a more equitable distribution, though currently most funding and resources remain with UK institutions. In-country respondents highlighted several opportunities for UK funding to address this uneven distribution, namely by:

- Identifying new institutions to support and build capacity – including newer and smaller institutions;
- Supporting new networks outside of Nairobi – particularly considering Kenya's devolved government structure;
- Developing an institutionalised mechanism to support collaboration between institutions –allowing institutions to share information and build partnerships prior to responding to funding calls.

### 3.2.5 Funding for capacity strengthening

Most funders interviewed indicated that research capacity strengthening is embedded within research programmes that they fund, rather than as a standalone programme. Examples include training in research methodologies, user engagement, paper writing and conference presentations. The Newton Fund, for example, funds some staff exchange programmes between UK and Newton Fund partners to support bi-directional capacity building of staff and sharing of best practice between funders.

Other institutional capacity building activities currently funded by the UK research funders are the Good Financial Grants Programme and Research Management Programme (ReMPro), which are both led by the African Academy of Sciences (AAS).

### 3.2.6 Funding Distribution Across the SDGs

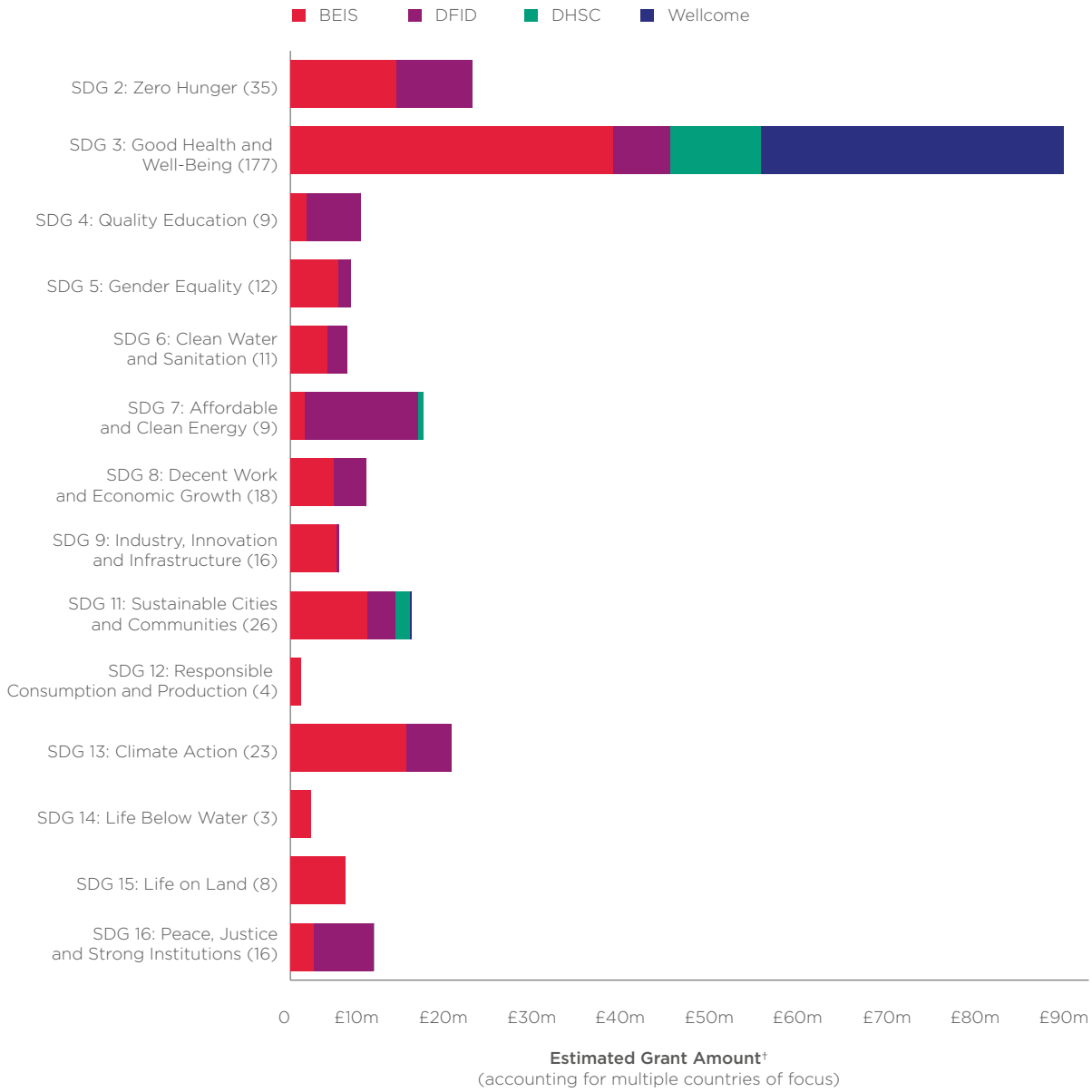
To gain a deeper understanding of the investments made, each of the research projects included in the portfolio-level analysis was assigned with up to 5 of 14 of the SDGs, based on the qualitative information provided.

The three SDGs not selected to classify projects against were SDG 1: No Poverty, SDG 10: Reduced Inequality and SDG 17: Partnership for the Goals as each of these goals is deeply embedded within the funding programmes strategies. This is particularly apparent with SDG 10 and SDG 17 where ODA is referenced multiple times within each goal's respective targets and indicators as a tool to achieve the SDGs. In the case of SDG 1, this goal is focused on the eradication of poverty in all its forms everywhere – which is at the core of each funder's research programme.

Figure 4 summarises the total number of research projects (with Kenya listed as a country of focus) per SDG as well as their corresponding estimated funding amounts accounting for multiple countries of focus.

For projects assigned multiple SDGs, funding amounts were not divided accordingly. Estimated funding amounts presented in Figure 4 represent the total value of research projects that are relevant to that SDG (correcting for multiple countries of focus) and does not equate to the total value of the portfolio of UK ODA-funded and Wellcome-funded research projects.

**Figure 4 - Estimated financial breakdown by Sustainable Development Goal of research projects relating to Kenya (initiated between FY 2014/15 – 2018/19) funded by UK ODA research funders and Wellcome accounting for multiple countries of focus†*.**




(Total number of projects per SDG indicated in brackets)

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

*The total funding value across all SDGs presented in the figure does not equate to the total value of the portfolio of UK ODA funded and Wellcome funded research projects.

### 3.2.7 Alignment of UK ODA & Wellcome funding with national research and development priorities

In-country responses from the stakeholder interviews generally indicated a close alignment of UK research funding with the national research and development priorities of Kenya. This alignment can be accounted for by the long history of partnership between the UK and Kenya, and configuration of language, education systems and universities. The establishment of the UK-Kenya High-Level Oversight Board in Research, Science and Innovation was highlighted as a mechanism that helps leverage UK funding investments (such as the Newton-Utafiti Fund) and strengthens the bilateral relationship to promote coordination and collaboration.

However, although UK funding is aligned with Kenyan national priorities, current investments do not always integrate perspectives of those affected by the innovations, and there remains a need to target systems strengthening (including institutional support) to build the ecosystem. Amongst the UK funders, opinion was that research could be more responsive to Kenyan priorities, beyond an academic level and that investments should be expanded beyond the current focus of Nairobi. Kenyan stakeholders expressed a need for further UK Government prioritisation and collaborative design of programmes to include clear theories of change, with a strong evidence base, to ensure greater policy impact.

The potential future national and development priorities for Kenya highlighted by in-country stakeholders included innovation, security studies, education systems, climate change and crop adaptation, cancer and related health issues, environmental problems, society and culture for development. One UK funder highlighted the need to invest more in supporting technology transfer, commercialisation and intellectual property rights.

## Box 4 - The Big Four Agenda

As mentioned in Section 1.4, the Kenyan Government's national research priorities are drawn from a set of four key policy areas, collectively known as the Big Four Agenda, to shape the nation's socioeconomic development Strategy until 2022.

1. Supporting value addition and raising the manufacturing sector's share of national GDP;

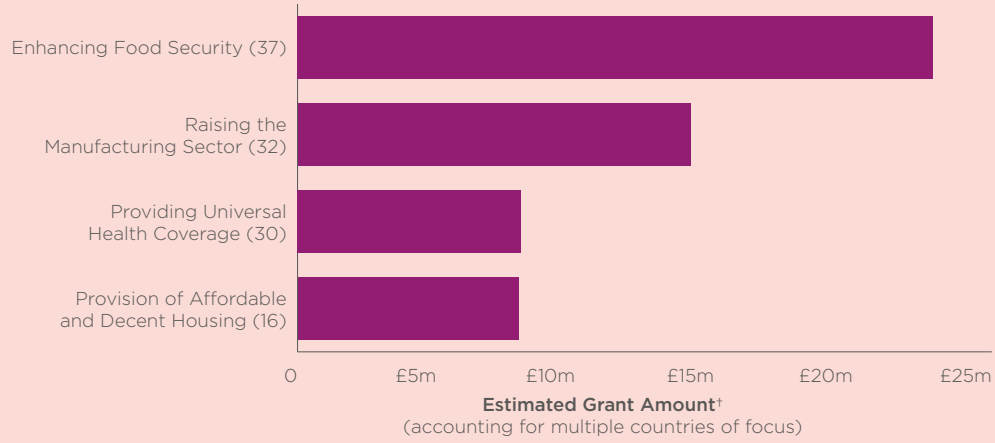
2. Enhancing nutrition and food security for all Kenyans;

3. Providing universal health coverage to guarantee quality and affordable healthcare to all Kenyans;

4. Provision of affordable and decent housing for all Kenyans.

Using data from the portfolio-level analysis, Figure 5 provides an approximation of research relevant to each of the priority areas listed under the Big Four Agenda (accounting for multiple countries of focus).

**Figure 5 - Estimated financial breakdown by priority area of the Big Four Agenda of research projects relating to Kenya (initiated between FY 2014/15 – 2018/19) funded by UK ODA research funders and Wellcome taking into account multiple countries of focus†*.**




(Total number of projects in brackets)

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

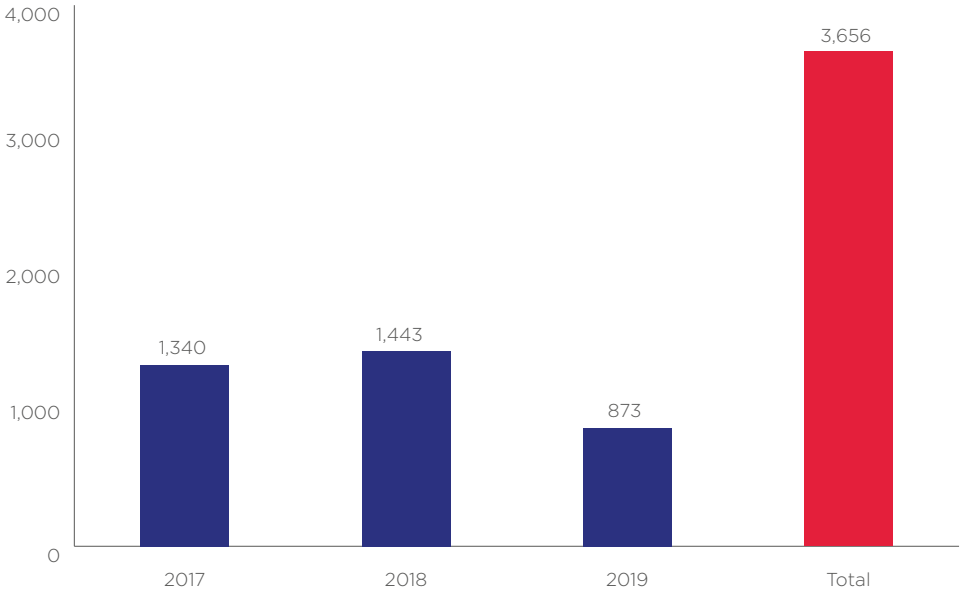
*The total funding value across all priority areas presented in the figure does not equate to the total value of the portfolio of UK ODA-funded and Wellcome-funded research projects.

## 3.3 What is the reach and potential impact of UK research funding?

### 3.3.1 Publication volume

From the bibliometric analysis, UK-funded research output relating to Kenya 3,656 publications between 2017 and 2019 (Figure 6). As this data was collected in August 2019, the publication number is not indicative of the final publication output of 2019, and it is likely that this figure will be higher than in this analysis.

**Figure 6 - Total number of publications produced in 2017 – 2019* relating to Kenya resulting from UK research funding**



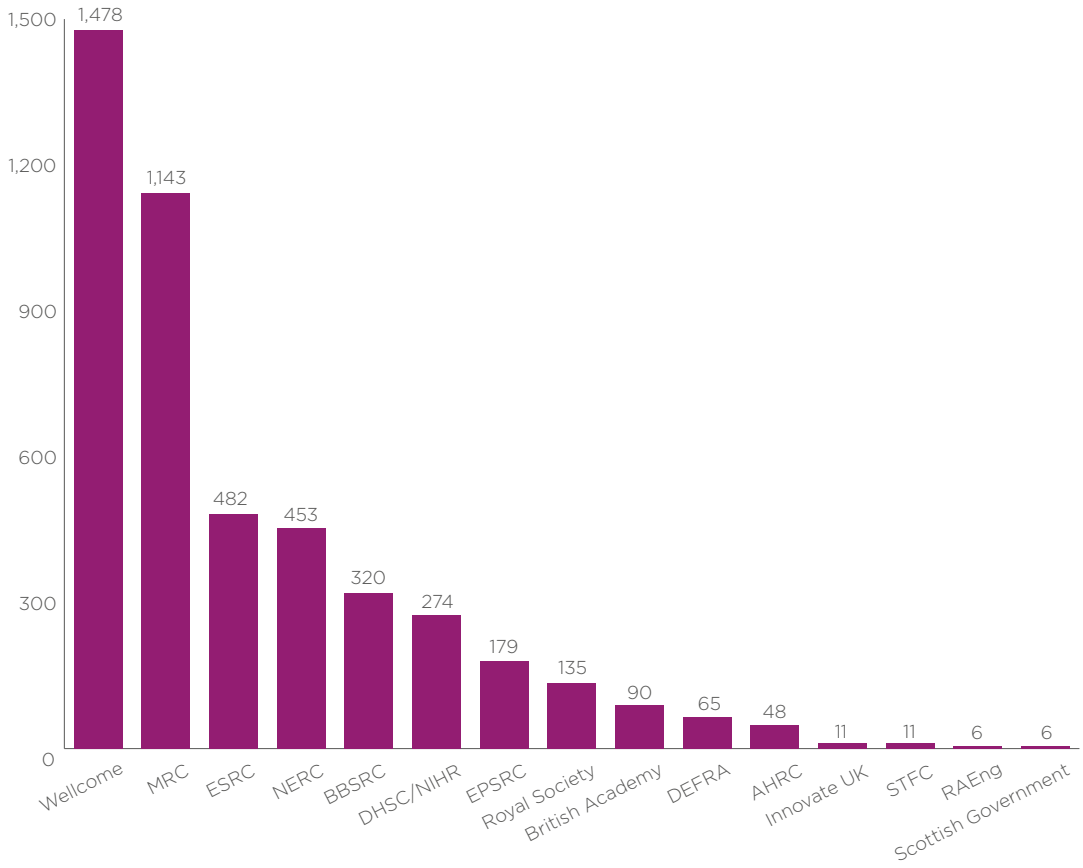

Source: Dimensions

*The data for 2019 was collected in August 2019, therefore is not representative of total no. of publications in 2019.

### 3.3.2 Publications per funder

The majority (76%) of research output during this period listed a single UK funder with most of these publications being co-funded with other international funders. The remaining publications (24%) were funded by two or more UK funders. Wellcome was associated with the greatest number of research outputs (Figure 7), followed by UKRI (largely driven by the Medical Research Council who, among the UK research councils, have a comparatively long history of funding research through ODA). It is important to note that more recently-funded research is unlikely to have as many publications and much of the diversification of the ODA budget for research only started in 2016 (following the launch of the UK's revised aid strategy in November 2015).

**Figure 7 – Number of publications per UK research funder in 2017 – 2019***




Source: Dimensions

*As publications are counted once for each mention of UK funder, where UK research funders were co-funders, there may be double counting.

### 3.3.3 Thematic focus of UK-funded research output

UK funded research output in Kenya mostly focuses on medical and health and biological sciences. Figure 8 presents the ten most common thematic areas of UK research funded publications relating to Kenya which together comprise 94% of all publication outputs considered in the bibliometric analysis. The Australian and New Zealand Standard Research Classification (ANZSRC) was used to categorise publications as this was considered by UKCDR as the most detailed and wide-ranging system. The ANZSRC was also deemed more appropriate than using the SDGs (as in Section 3.2.6) as the publications considered for this component were not limited to those with an international development focus (for reasons outlined in Section 2.3.1).

**Figure 8 - Thematic focus of UK-funded research output relating to Kenya (2017 – 2019)**


Source: Dimensions

Number of publications per field is indicated (13 research publications were unclassified)

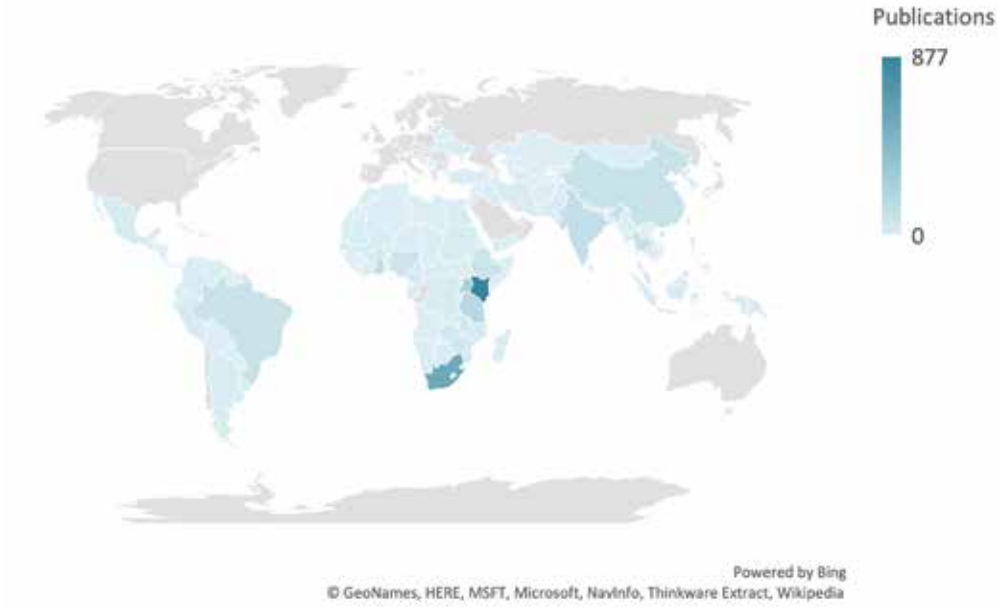
Abbreviations: **Eng** = Engineering; **Env Sci** = Environmental Sciences; **Ag Sci** = Agricultural Sciences; **Hist & Arch** = History and Archaeology; **I & C** = Information and Computing Sciences

### 3.3.4 Location of authors and co-authors of publications arising from UK funded research

Publications arising from UK research funding were produced by authors from research institutes in the UK (2,868), USA (1,013) and Kenya (847). As with most research, the majority of research outputs (95%) were produced in collaboration. Of the co-authored papers, 18% included researchers from institutions in both Kenya and the UK. Additionally, almost two-thirds (62%) of all publications arising from research collaborations included a co-author from a LMIC-based research institution, of which 24% were co-authored by authors affiliated with research institutions in Kenya.

UK funding supports some South-South collaboration, with 20% of all research outputs including more than one author from an LMIC-based research institution - 10% of which were between Kenya and another LMIC country. There is an opportunity for UK research funders to build on this, and support South-South research partnerships and production of research outputs.

**Figure 9 - Location of collaborators and co-authors of publications resulting from UK research funding relating to Kenya (2017 – 2019)***




Source: Dimensions

*As some of the publications were co-authored by researchers from institutions in several countries, some publications may be double counted

## 3.3.5 Top research institutions producing UK-funded research output relating to Kenya

Table 11 summarises the ten research institutions involved with the greatest number of publications resulting from UK funding relating to Kenya.

**Table 11 - The top 10 institutions involved with the production of research output relating to Kenya produced following UK research funding (2017 – 2019)***

| Rank | Institution | No. of publications |
|---|---|---|
| 1 | University of Oxford | 665 |
| 2 | London School of Hygiene & Tropical Medicine | 569 |
| 3 | Kenya Medical Research Institute (KEMRI) | 515 |
| 4 | Imperial College London | 292 |
| 5 | University College London | 284 |
| 6 | Liverpool School of Tropical Medicine | 173 |
| 7 | University of Cambridge | 157 |
| 8 | University of Liverpool | 154 |
| 9 | University of Edinburgh | 152 |
| 10 | University of Nairobi | 124 |

Source: Dimensions

*As some of the publications were co-authored by researchers from institutions in several countries, some publications may be double counted

Limiting the list of institutions to just those based in Kenya (Table 12), it can be seen that the top institution, Kenya Medical Research Institute, was involved with more than four times the number of publications from the second-highest ranked institution (University of Nairobi).

### Table 12 - The top 10 Kenyan institutions involved with the production of research output relating to Kenya produced following UK research funding (2017 – 2019)*

| Rank | Institution | No. of publications |
|---|---|---|
| 1 | Kenya Medical Research Institute (KEMRI) | 515 |
| 2 | University of Nairobi | 124 |
| 3 | Ministry of Health | 118 |
| 4 | International Livestock Research Institute | 88 |
| 5 | Pwani University | 65 |
| 6 | African Population and Health Research Center | 54 |
| 7 | Kenyatta University | 45 |
| =8 | Moi University | 31 |
| =8 | Aga Khan University | 31 |
| =10 | International Centre of Insect Physiology and Ecology | 30 |
| =10 | Jomo Kenyatta University of Agriculture and Technology | 30 |

Source: Dimensions

*As some of the publications were co-authored by researchers from institutions in several countries, some publications may be double counted

### 3.3.6 Open Access

UK research funding demonstrated a commitment to equitable access of research outputs, with 78% of publication outputs analysed being open access. Table 13 outlines the distribution of UK-funded open access research outputs by open access category (full descriptions of the open access categories in Annex 6). Importantly, 98% of all publication outputs were journal articles, with the remaining 2% being book chapters, pre-prints and proceedings.

**Table 13 - Total number of UK funded open access research outputs relating to Kenya published in 2017 - 2019**

| | No. of publications |
|---|---|
| Gold | 1451 (50%) |
| Hybrid | 667 (23%) |
| Green | 319 (11%) |
| Bronze | 305 (11%) |
| Total Open Access | 2902 |

Source: Dimensions

### 3.3.7 Reach and potential impact

Descriptions of a wide range of outcomes and impacts resulting from UK research funding were provided by stakeholders, from saving lives, to strengthening institutions and fostering collaboration (examples in Annex 7).

Case studies were developed from these examples (shortlisting described in Section 2.5) that show the national and international reach of the results of UK funding in Kenya and provide useful examples of the benefits of such funding (see Annex 1). These include:

- Improving mangrove conservation and supporting coastal livelihoods
- Improving bioenergy policy and access in East Africa
- Promoting free and fair elections and democratisation in Africa
- Influencing maternal and child health policies

### 3.3.8 South-South networking

The facilitation of South-South networks was valued by respondents with some in-country stakeholders particularly emphasising the importance of the EARH in facilitating connections and fostering relationships with relevant stakeholders in East African countries. The following were cited by UK and in-country stakeholders, as programmes which have facilitated South-South networking:

- The Africa Research Universities Alliance, the GCRF Network+
- The new GCRF-funded Knowledge Transfer Network (KTN) Africa programme
- The Wellcome-funded DELTAS programme, the Wellcome-funded Researcher Mobility Schemes
- The Zoonoses and Emerging Livestock Systems

In terms of better supporting South-South networks, some respondents emphasised the potential role of regional conferences and workshops as an opportunity to showcase research outputs of partnerships with other countries in the region. The EARH was proposed as a potential entry point for this.

### 3.3.9 Perceptions of UK-funded research

UK funders were seen as key partners for STI by in-country stakeholders, which was said to be driven by a longstanding relationship between the two countries - with DFID, Wellcome, DHSC/NIHR, the Newton-Utafiti Fund and GCRF having the most recognisable presence.

There was a mixed response from in-country stakeholders who indicated that there is some confusion about the remit of the newer UK funding schemes, such as GCRF, and that there is a need to demonstrate that it is all from the UK government. Some stakeholders highlighted that the remits of research councils, and particularly health-focussed funders (Wellcome, DHSC) are clear. However, they felt that the remits of DFID and more policy-oriented research funders are less clear.

There was generally a sense of a good and collaborative relationship between Kenyan in-country stakeholders and different research funders. The Newton-Utafiti Fund was described as a “game changer” in terms of priority setting and has been embraced by the Kenyan government. One research institution was positive about the requirement of a UK university to pair with researchers in LMICs and highlighted that these funding calls have resulted in strengthening of potent research collaborations. However, another research institute expressed concern that large amounts of UK research funding were going to non-university-based research institutions and that most research is led by UK researchers.

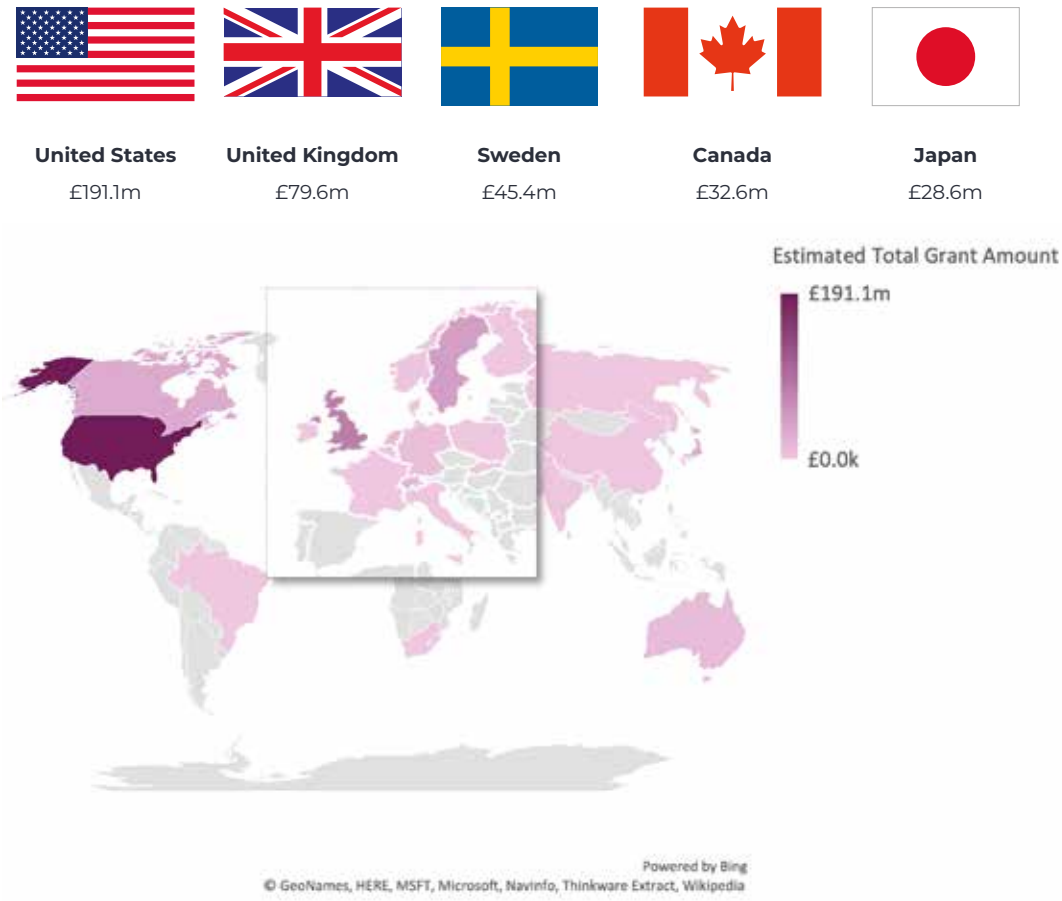
## 3.4 How does the investment extent and outputs from UK funding, compare to other external funding to Kenya?

A total of £695.2m was invested by 79 of the public research funders between 2014/15 and 2018/19, across 1,018 projects relating to Kenya – a figure which is reduced to an estimated £447.3m when correcting for research projects with multiple DAC-listed countries of focus. Additionally, a total of 17 private research funders invested £180.1m (estimated £154.2m when correcting for multiple DAC-listed countries of focus) on 282 research projects relating to Kenya over the same period.

By way of comparison, a total of £204.1m (estimated £135.6m when accounting for multiple DAC-listed countries of focus) was invested on research projects relating to Kenya between 2014/15 and 2018/19 by three funders based in the UK (both public and private). [A breakdown of the top research funders on Dimensions investing the most funds on projects relating to Kenya between 2014/15 and 2018/19 can be found in Annex 8.]

Figure 10 ranks the ten countries that have invested the greatest amount of public research funds on projects relating to Kenya between 2014/15 and 2018/19 (considering multiple DAC-listed countries of focus). The UK's estimated £79.6m-worth of publicly-funded research relating to Kenya ranks only behind the United States' (estimated £191.1m) which benefits from having data from more research organisations included on Dimensions. EU institutions have invested an estimated £11.8m-worth of public funds on research relating to Kenya, controlling for multiple DAC-listed countries of focus (EU investments are recorded separately to individual EU member states in Dimensions).

## Figure 10 - Estimated top-10 countries investing the most public funds on research relating to Kenya - taking into account multiple DAC List countries of focus (2014/15 – 2018/19)†




| United States | United Kingdom | Sweden | Canada | Japan |
|---|---|---|---|---|
| £191.1m | £79.6m | £45.4m | £32.6m | £28.6m |

| Switzerland | The Netherlands | EU Institutions* | Australia | Germany |
|---|---|---|---|---|
| £17.1m | £15.9m | £11.8m | £11.4m | £8.7m |

Source: Dimensions

†Made by equally dividing individual grant amounts by that research project's total number of countries of focus.

*The amount indicated for EU institutions does not include funding amounts from individual EU member states

While the results presented in this section are not a comprehensive overview of the activities of all public research funders globally on projects relating to Kenya (as several funders are not included on the Dimensions database), the findings at the organisational level (Annex 8) provide an indication of the range of the largest public research investments. It is, however, when these findings are extended to the country level that the significance of missing public research funders is more apparent. The results presented in Figure 10 are likely to overestimate the proportion of the contribution to public research investments on projects related to Kenya of countries that have a greater proportion of their public research funders' data included on the Dimensions database (and a likely

underestimation for those countries with a smaller proportion of their public research funders' data on the database).

Despite the clearly-stated limitations with comparing the results of the two sections, these findings at least begin to help shape our understanding of the size of UK ODA investments on research relating to Kenya, how this compares to investments made by other public research funders globally and who the other major research funders are.

### 3.4.1 Perceptions of non-UK funded research

There are a wide range of research funders recognised by in country stakeholders in Kenya, with the United States Agency for International Development (USAID) being among the most recognised funders across all stakeholder groups, with repeated reference to USAID's work in agriculture research funding. The EU, Swedish International Development Cooperation Agency, Canada's International Development Research Centre and the Japan International Cooperation Agency were also among the more prominent funders mentioned by multiple stakeholder groups.

Although research funders in Kenya were largely international, the establishment of the Kenyan National Research Fund, has led to a rise in national research funding.

Compared to UK funded research, the in-kind model employed through the Newton-Utafiti Fund specifically, was received very positively compared to other international matched funding models which largely focus on financial matched funding. It was perceived that the UK has a better record than the USA for example, of partnering with local institutions, resulting in long-standing international UK-Kenya partnerships.

# Discussion

### The UK has a long-history of research partnerships and is one of the largest international research funders in Kenya

The UK investment in research and innovation in Kenya between 2014/15 – 2018/19 is substantial, approximately £857.3m in 272 projects that listed Kenya as one of the countries of focus, reduced to an estimated £164.4m after correcting for multiple countries of focus. The investment is broad (spanning all 17 SDGs), but with a strong focus on the SDG 3: Health and well-being and complex (through a wide range of UK Government and Wellcome funding schemes). The UK is second only to the USA as a leading national funding partner to Kenya, based on the available data, and is key to the Kenyan research ecosystem.

Several long-term investments underpin this partnership, notably the KWTRP in Kilifi (set up in 1989 in partnership with Oxford University), long-term DFID funding and the more recently developed AESA platform with UK funding from both Wellcome and DFID.

Kenya has put STI at the heart of its development strategy going forwards and ongoing close alignment and national level partnership are facilitated through the UK-Kenyan High-Level Oversight Board in Research, Science and Innovation, the DFID EARH and the UK SIN Office in Nairobi.

### Strong and long-standing institutional collaboration has been supported for research

The richness of institutional (and individual) collaboration afforded by the UK investment is longstanding, with many productive collaborations highlighted between UK and Kenyan research institutions. The University of Oxford receives an estimated five times more direct funding than any other research institution- although much of this is known to be distributed onwards, in particular to the KWTRP and three institutions in Kenya (with KEMRI, APHRC and University of Nairobi) dominate the direct receipt of UK funds.

Notably, two of the major funding recipients in Kenya are research institutes rather than universities, raising concern by some stakeholders that this research funding is not stimulating the national education system. Some of the respondents to the stakeholder survey indicated that the Kenyan Government is keen for smaller universities to receive greater funding and support and this could be considered by UK funders through potential further funding of research management and institutional capacity programmes in these institutions.

The DFID EARH is cited as important in fostering relationships between both the UK and Kenya and also regionally within East Africa. Multiple collaborations have been supported through projects between Kenya and other African partner countries (including Uganda, South Africa, Nigeria, Malawi and Tanzania). The

value and potential of such South-South partnerships is high

**The UK needs to maximise the benefits of this large and important investment in Kenya through further alignment, coherence and equitable partnership**

The outputs from the UK ODA- and Wellcome-funded research investments and partnership activities in Kenya are strong with 3,656 publications derived from UK funding between 2017 and August 2019 - with medical and health sciences, biological sciences and studies in human sciences among the main themes. Lead authorship is, however, mainly UK-based.

Collated case studies and programme highlights demonstrate the global reach and diverse nature of the investment spanning mangrove conservation, bioenergy access, democracy, and maternal and child-health (Annex 1).

Close alignment and national-level partnership are facilitated through the UK-Kenya High Level Oversight Board in Research, Science and Innovation; the DFID EARH; UK SIN Office; and AESA - all of which are based in Nairobi. UKCDR, and the SCOR Board have been working with the UK-Kenya High Level Oversight Board in particular on health and housing. For example, the UK-Kenya research symposium 'Healthy cities: Affordable Housing & Sustainable Infrastructure' in May 2019 convened 200 international experts and stakeholders, and saw the announcement of a joint statement from the UK and Kenyan Governments committing to continued partnership on research, policy and practice in Kenya. The commitment was the result of collaboration with UK-Kenya High Level Oversight Board and the Board continues to have a role in achieving strategic coherence.

UK funding is seen to be largely aligned with Kenyan national priorities - the Newton-Utafiti Fund is viewed particularly positively due to its shared development. There is also an opportunity for UK-funded research to expand across the national development priorities under the (relatively new) Big Four Agenda. The expanding remit of in-country funding through the National Research Fund provides further opportunities for alignment with UK funding.

There are many benefits to the diversity of the funding schemes through which the UK funds research focussed on Kenya. A range of different funding models focussed at the researcher (e.g. GCRF), institution (e.g. DELTAS) and government levels (e.g. Newton-Utafiti Fund) allow both bottom-up development of research priorities (which the government may not be aware of) and top-down alignment with national research priorities. The Newton-Utafiti Fund is notable in Kenya as, although the funding amount is relatively small in comparison to other schemes, it is highly visible and has been very positively received due to its shared development. In addition, the variety of schemes offer a wide range of disciplinary remits and allows both bilateral country and global partnerships.

This report has, however, highlighted that the complexity of UK funding and direct links to research institutions may have led to some confusion over the remit and cohesion of different UK funding schemes (particularly more recent ones, such as GCRF, which began following the launch of the UK's revised aid strategy in November 2015). Improved coherence between UK funded schemes, making sure they are consistently linked to the UK Government would increase

the visibility and impact of UK investment further. Especially as other countries that Kenya partners with e.g. Sweden, have much more streamlined models.

Almost two-thirds of the UK funding (60.4%) presented in this report goes to lead institutions based in the UK (although much of this is distributed onwards), but UK funding initiatives already trying to shift this balance e.g. DELTAS scheme that funds directly to Kenyan institutions. There is a strong record of research partnership between the UK and Kenya and this report highlights the remaining gaps to inform future direction - namely working towards more equitable and sustainable research collaboration, alignment, visibility and impact.

The synthesis of the investment in this report provides an excellent basis for further discussion on development of the UK-Kenya government relationship, following the UK Government's new and distinctive commitment to work alongside, invest in, and partner with African nations. This report provides content, especially through the case studies, that could be used for showcasing the benefits that UK investments have afforded to date.

**The UK Government's partnerships with Africa has an established and effective model in Kenya**

In conclusion, this report demonstrates an excellent baseline of UK funding and collaboration in Kenya on which to base future activities under the UK Governments' partnerships with Africa. From these findings there are clear directions to take in the future towards partnerships, capacity building, data collection and coherence.

# Endnotes


1 FAC (2019). Written evidence from the Foreign and Commonwealth Office on behalf of Her Majesty's Government (UKA0012). House of Commons Foreign Affairs Committee (FAC) Inquiry. Beyond Aid: The UK's Strategic Engagement in Africa. http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/foreign-affairs-committee/beyond-aid-the-uks-strategic-engagement-in-africa/written/105575.html

2 World Population Review (2019). Total Population by Country 2019. World Population Review. Retrieved from http://worldpopulationreview.com/countries/

3 UNDP (2019). Human Development Report 2019. Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century. United Nations Development Programme.

4 World Bank (2019a). GDP per capita (current US$) | Data. Retrieved from https://data.worldbank.org/indicator/NY.GDP.PCAP.CD

5 World Bank (2019b). Life expectancy at birth, total (years) | Data. Retrieved from https://data.worldbank.org/indicator/SP.DYN.LE00.IN

6 OECD (2018). DAC List of ODA Recipients – OECD. Retrieved from http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/daclist.htm

7 DFID (2019). DFID Kenya – GOV.UK. Department for International Development. Retrieved from https://www.gov.uk/world/organisations/dfid-kenya

8 Ibid.

9 DFID (2018). DFID Kenya Profile: July 2018. The Department for International Development. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/723198/Kenya-July-2018.pdf

10 https://www.wipo.int/global_innovation_index/en/2019/

11 Cornell University, INSEAD, and WIPO (2019). The Global Innovation Index 2019: Creating Healthy Lives—The Future of Medical Innovation, Ithaca, Fontainebleau, and Geneva.

12 Ibid.

13 SIN (2016). UK Science & Innovation Network Country Snapshot: Kenya country snapshot. UK Science & Innovation Network.

14 WEF (2019). Global Competitiveness Index 2017-2018 – Reports – World Economic Forum. Retrieved from http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings

15 Ibid.

16 Scimago (2019). SJR – Kenya. Scimago Journal & Country Rank. Retrieved from https://www.scimagojr.com/countrysearch.php?country=ke

17 WEF (2019). Global Competitiveness Index 2017-2018 – Reports – World Economic Forum. Retrieved from http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings

18 Cornell University, INSEAD, and WIPO (2019). The Global Innovation Index 2019: Creating Healthy Lives—The Future of Medical Innovation, Ithaca, Fontainebleau, and Geneva.

19 WEF (2019). Global Competitiveness Index 2017-2018 – Reports – World Economic Forum. Retrieved from http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings

20 Kenya Vision 2030 | Kenya vision 2030. Retrieved from https://vision2030.go.ke/

21 AU (2019). Science, Technology and Innovation Strategy for Africa 2024. African Union.

22 SIN (2016). UK Science & Innovation Network Country Snapshot: Kenya country snapshot. UK Science & Innovation Network.

23 UNESCO (2019). Regional overview: Sub-Saharan Africa. United Nations Educational, Scientific and Cultural Organization. Retrieved from https://en.unesco.org/unesco_science_report/africa

24 Government of the Republic of Kenya (2013). Sector Plan for Science Technology and Innovation 2013-2017 – Revitalising and Harnessing Science, Technology and Innovation for Kenya's Prosperity and Global Competitiveness.

25 Government of the Republic of Kenya (2012). The Universities Act. No. 42 of 2012.

26 Republic of Kenya Ministry of Education (June 2019) NATIONAL RESEARCH PRIORITIES 2018 - 2022

27 UNESCO (2018). Women in Science. Fact Sheet No. 51, FS/2018/SCI/51. United Nations Educational, Scientific and Cultural Organization.

28 Fosci et al. (2019) DFID Country report for Kenya: report for the SRIA programme

29 SIN (2016). UK Science & Innovation Network Country Snapshot: Kenya country snapshot. UK Science & Innovation Network.

30 SIN (2016). UK Science & Innovation Network Country Snapshot: Kenya country snapshot. UK Science & Innovation Network.

31 According to estimates by UKCDR

32 According to estimates by UKCDR

# Annex 1: Case studies

Annex 2-8 are available in a supporting document on the UKCDR website

# Case Study 1: Improving mangrove conservation and supporting coastal livelihoods


**New national conservation plans, environmental associations, and community-led forest restoration and development projects have been informed by UK-funded research into mangroves in Kenya.**

## Key Information

**UK Funders:** DFID, ESRC, NERC

**Timeframe:** 2008 – 2017

**Total UK Funding:** £953,458

**Organisations:** Edinburgh Napier University (ENU), Kenya Marine and Fisheries Institute (KMFRI)

**Policy Influence:** Local, National

Mangrove trees provide a number of vital ecosystem services. Mangroves protect coastlines from erosion, filter sediment and pollutants, and form nursery grounds for fish. They are also amongst the most efficient natural carbon sinks. However, forests are being destroyed at a rapid rate. Over the last 30 years, there has been a 20% reduction in mangroves within Kenyan coastal regions, this is threatening the livelihoods of communities that rely on them.

## Towards impact

- The research team helped design national conservation plans, including informing the National Mangrove Plan (2017-2027) and the national plan for the UN REDD (Reduced Emissions from Forest Degradation and Deforestation) programme.
- The team worked with the Kenyan government to pioneer new legal instruments for community-based conservation. In 2010, this facilitated the creation of a national Community Forest Association and local Association for Coastal Ecosystem Services.

- The Mikoko Pamoja project became operational in 2010 and had its official launch at village level in June 2012. It uses research findings to conserve local mangroves and earn carbon credits to fund further conservation and community development schemes. It has led to 567 hectares of mangrove forest being planted and 12,553 tonnes of CO2 sequestered. For the community, it has created 148 jobs, and provided funding for school building, water pumps, and education scholarships.

- Through the Ecosystem Services for Poverty Alleviation program (ESPA), three Kenyan coastal projects have been funded that have contributed to the formation and running of the Mikoko Pamoja project. The project has acted as a template for community-based interventions With the h first replication underway in the Vanga blue forest, close to Tanzania.

## Underpinning research

From 2002 – 2013, ENU and KMFRI led novel research in Gazi Bay, Kenya into the ecological value of mangrove forests and ecosystem recovery. This included:

- Studies evidencing the importance of mangrove ecosystems as vital habitats for juvenile fish and as efficient natural carbon sinks.

- Studies exploring the key drivers of mangrove loss in Kenya and potential risk factors, including the planting of 5,872 trees on previously devastated land. This revealed that concerning barriers to regeneration, the highest risk factors were population density, soil type and proximity to roads.

- Studies investigating how mangrove ecosystems recover recommended practical actions for conserving mangrove forests:

    - Mangrove trees grow best (highest biomass) when planted in mixed species plots

    - A higher density of mangroves can increase rates of sediment accretion, improving forests' ability to adapt to sea-level rise and aiding survival of trees

- Studies quantifying stocks and flows of above and below-ground carbon in mangrove forests across Kenya allowing for valuations on the voluntary carbon market.

## Evidence of impact

### Policy documents

‰ 2017 policy doc National Mangrove Ecosystem Management Plan [Hyperlink]

### Selection of publications:

‰ Huxham, M. et al. (2007) 'Stable isotope records from otoliths as tracers of fish migration in a mangrove system', *Journal of Fish Biology*, 70, 1554-67. [Hyperlink]

‰ Kirui B. et al. (2012) 'Effects of species richness, identity and environmental variables on growth in planted mangroves' *Marine Ecology Progress Series*, 465, 1-10. [Hyperlink]

‰ Rideout, A. et al. (2013) Making predictions of mangrove deforestation: a comparison of two methods in Kenya. *Global Change Biology*. [Hyperlink]

‰ Huxham, M. et al. (2010) 'Intra and inter-specific facilitation in mangroves may increase resilience to climate change threats', *Philosophical Transactions of the Royal Society,* 365, 2127-35. [Hyperlink]

‰ Kumara, M.P. et al. (2010) 'High mangrove density enhances surface accretion, surface elevation change, and tree survival in coastal areas susceptible to sea-level rise', *Oecologia* ,164, 545-53. [Hyperlink]

‰ Kirui, K.B. et al. (2012) 'Mapping of mangrove forest land cover change along the Kenya coastline using Landsat imagery', *Ocean and Coastal Management*. [Hyperlink]

**Other resources:**

‰ TED Talk: Saving the Environment through carbon trading, Mtwana Mwamba [Hyperlink]

‰ Mangroves of East Africa, Cambridge: UNEP World Conservation Monitoring Centre, 2003 [Hyperlink]

‰ Mikoko Pamoja Project – 2016-2017 Plan Vivo Annual Report, 2017 [Hyperlink]

‰ Mikoko Pamoja Project – Kenya, Edinburgh: Plan Vivo, 2019 [Hyperlink]

‰ The blue forest: A Kenyan community fights climate change with mangrove, UNDP Equator Initiative, 2018 [Hyperlink]

‰ YouTube video: Mikoko Pamoja blue forests – people and mangroves together [Hyperlink]

‰ Blue forests – people and mangroves together, Brighton: C-Level [Hyperlink]

‰ UNEP (2011) *Economic Analysis of Mangrove Forests: A case study in Gazi Bay*, Kenya, UNEP [Hyperlink]

‰ REF Impact Case Study [Hyperlink]

# Case Study 2: Improving bioenergy policy and access in East Africa


**Changes in national energy policies leading to improved access to clean energy and livelihoods for 220,000 people in Kenya, India, Sri Lanka, and Tanzania has been informed by studies undertaken through the PISCES Consortium.**

## Key Information

**UK Funders:** DFID, EPSRC, ESRC, Scottish Government

**Timeframe:** 2007 - 2013

**Total UK Funding:** £4.99m

**Organisations:** PISCES Consortium (African Centre for Technology Studies, University of Edinburgh, MS Swaminathan Research Foundation, Practical Action Consulting, University of Dar es Salaam)

**Policy Influence:** Local, national, international

## Towards impact

- PISCES research insights led to the establishment of bioenergy policy working groups (PWGs) in Kenya and Tanzania. The groups, bringing together government, NGOs, bilateral donors and business actors, have ensured consultative and participatory bioenergy policy discussions as well as mainstreaming gender issues into bioenergy policy in Kenya. The bioenergy PWG was instrumental in writing Kenya's National Biofuel Policy in 2011, which was then integrated in the draft Kenya Energy Policy in 2014 and 2015.

- Based on PISCES research findings, the Kenya Charcoal Policy Handbook 2011 provides guidance on charcoal regulations. It is being used by local officials, such as Kenya Forest Services, to guide their work and has empowered local communities to fight illegal charcoal taxes.

- Collectively, PISCES has improved access to clean energy and livelihoods through bioenergy to approximately 220,000 people in Kenya, India, Sri Lanka, and Tanzania.

## Underpinning research

- PISCES gathered baseline data on bioenergy in east Africa including information on biocrops, fieldwork on the 'value chains' connecting producers and consumers, and socio-economic surveys. The studies found that a combination of inadequate policy environments, missing linkages between actors, and a lack of awareness of clean technologies were hindering the uptake of bioenergy and rendering the market unattractive.

- The research group completed baseline studies on gender issues in the Kenyan bioenergy arena, including a systematic review of existing research. The resulting paper (2008) presented the case for mainstreaming gender into bioenergy policies and the formulation of bioenergy policy working groups to guide policy processes.

- Ethnographic research provided evidence on the potential of sustainable energy technologies including research partnerships, research uptake, and how to operationalise activities. The research showed that close relationships between researchers, entrepreneurs and local consumers are crucial to turning research findings and local knowledge into effective products and services.

## Evidence of impact

### Policy documents

- Kenya Charcoal Policy Handbook, 2011 [Hyperlink]

- Kenya Draft National Biofuel Policy, 2011 [Hyperlink]

- Kenya Draft National Energy Policy, 2014 [Hyperlink]

- Kenya Draft National Energy Policy, 2015 [Hyperlink]

### Selection of publications:


- Molony, T (2011) 'Bioenergy Policies in Africa: Mainstreaming Gender amid an Increasing Focus on Biofuels', *Biofuels, Bioproducts and Biorefining*, 5 (3), 330-41. [Hyperlink]

- Molony, T and J. Smith (2010) 'Biofuels, Food Security and Africa', *African Affairs*, 109 (436), 489-98. [Hyperlink]

- Molony, T and J. Smith (2010) 'African Biofuels', *BioFuels Journal*, Third quarter, 64.

- Molony, T and J Smith (2010) `Biofuels in Africa: Growing Complexities', in *Africa Energy Yearbook 2010*, London: EnergyNet, 61-64.

- Molony, T and J. Smith (2009) `Sustainable Biofuels Crops and Access in Developing Countries', PISCES Working Brief no.2, Nairobi: PISCES, [Hyperlink]

- Molony, T (2009) `Tanzania Palm Oil' in Practical Action Consulting, ed. *Small-Scale Bioenergy Initiatives*, 76-80.

‰ Muchiri, L (2008) 'Gender and Equity in Bioenergy Access and Delivery in Kenya', PISCES, Practical Action [Hyperlink]

‰ Smith, J. (2010) *Biofuels and the Globalisation of Risk*, Zed Books: London.

**Other resources:**

‰ Policy Innovation Systems for Clean Energy (PISCES), University of Edinburgh [Hyperlink]

‰ Liquid Biofuels Strategies and Policies in selected African Countries (PISCES), p.36 [Hyperlink]

‰ Countering poverty with clean energy, ESRC [Hyperlink]

‰ Improving the effectiveness of alternative energy systems in sub-Saharan Africa and south Asia [Hyperlink]

‰ Alternative energy systems, UKCDR case study [Hyperlink]

‰ REF Impact Case Study [Hyperlink]

# Case Study 3: Promoting free and fair elections and democratisation in Africa


**Changes to electoral practices in Kenya, and to international donor support of democratisation processes, have been guided by ESRC-funded research into political parties, electoral manipulation, and post-election violence in sub-Saharan Africa.**

### Key Information

**UK Funders:** ESRC

**Timeframe:** 2008 - ongoing

**Total UK Funding:** £1.22m

**Organisations:** University of Oxford, University of Warwick, University of Durham, University of Birmingham, Westminster Foundation for Democracy

**Policy Influence:** National, international

## Towards impact

ESRC-funded research undertaken since 2008, addressing questions of how elections lead to violence and how political systems can be designed to promote more accountable and effective government, has been taken up by national and international policy actors.

- The project PI contributed to Kenya's Independent Review Commission (Kriegler Commission), an official investigation established by the Kenyan government into the 2007 elections. This led to a restructuring of the Electoral Commission as a more autonomous body ahead of the 2013 elections.

- Aspects of the Deep Election Monitoring (DEM) model developed by the team have been adopted by national governments, including in Kenya, Ethiopia, and Nigeria, and by international actors, such as UNDP, as part of preparations for the 2015 Nigerian elections.

- The 'Early Warning and Long-Term Monitoring Project' brought together academics across the UK and Kenya to provide long-term monitoring of election practices. This shaped UK government policy on anticipating electoral manipulation and violence and informed the approach to the 2013 Kenya elections.

- The research team have briefed every British High Commissioner to Kenya since 2008 as part of deep engagement with the UK Foreign and Commonwealth Office (FCO) including a 'Diplomatic Excellence Day' attended by the FCO African Directorate in 2011.

## Underpinning research

- The research team analysed political parties in the 2008 Zambian presidential election. Contrary to existing literature, they found that political leaders regularly changed their positions on key policy issues or employed 'populist' messages to mobilise support. The research advocated for donors to improve the information available to citizens about members of parliament and assist political parties to better respond to popular concerns.

- In 2009, research on elections and violence identified four processes that had led to post-election violence in Kenya in 2008.

- Research exploring party turnover in Africa found opposition parties are four-times more likely to win elections when the sitting present does not stand. A framework was then developed for assessing when elections were most likely to result in a change of power and electoral violence.

- Research over the last 10 years in Kenya, Ghana and Uganda has surveyed 8,500 citizens, interviewed political and civil society leaders, and conducted field simulations of electoral manipulation. This led to the development of the DEM model to track manipulation strategies and identify risks of election violence risk.

## Evidence of impact

### Policy documents

- The Kreigler Report (Nairobi, 2008) [Hyperlink]

### Selected literature


- Cheeseman, N. (2008) 'The Kenyan elections of 2007: An introduction, *Journal of Eastern African Studies*, 2(2), 166-184. [Hyperlink]

- Cheeseman, N. and M. Hinfelaar (2008b) 'Parties, Platforms, and Political Mobilization: The Zambian Presidential Election of 2008', *African Affairs*, 109(434), 51-76. [Hyperlink]

- Cheeseman, N. and D. Branch (2009) 'Democratization, Sequencing, and State Failure in Africa: Lessons from Kenya', *African Affairs*, 108(430), 1-26. [Hyperlink]

‰ Cheeseman, N. (2011) 'The Internal Dynamics of Power-sharing in Africa', *Democratization* 18, 2. [Hyperlink]

‰ Cheeseman, N. (2010) 'African Elections as Vehicles for Change', *Journal of Democracy* 21, 4. [Hyperlink]

‰ Cheeseman, N. et al. (2013) 'Rethinking the "Presidentialism Debate": Conceptualizing Coalitional Politics in Cross-Regional Perspective', *Democratization*.[Hyperlink]

**Other resources**

‰ REF Impact Case Study [Hyperlink].

‰ Supporting democracy in sub-Saharan Africa (ESRC, 2015) [Hyperlink]

‰ Safeguarding elections and strengthening accountability in new democracies (ESRC, 2019) [Hyperlink]

‰ Promoting democracy in Africa (University of Oxford) [Hyperlink]

‰ ESRC Impact Case Study [Hyperlink]

# Case Study 4: Influencing maternal and child health policies in resource-poor countries


**Improved maternal and child health care outcomes, as a result of policy and funding design evaluation, are informed by UK-funded research on healthcare access in urban informal settlements.**

## Key Information

**UK Funders:** DFID, Wellcome

**Timeframe:** 1999 - 2016

**Total UK Funding:** £5.41m

**Organisations:** University of Southampton, African Population Health Research Centre (APHRC)

**Policy Influence:** National, International

Approximately 800 women per day die worldwide from preventable causes related to pregnancy and childbirth. 99% of these deaths occur in LMICs, above-all in sub-Saharan Africa and South Asia. In addition, over 3 million new-born babies die every year. Most of these women and children could be saved with adequate provision for reproductive and maternity health care.

## Towards impact

‰ Researchers took part in the United Nations Expert Group in January 2008. Lessons were published by the UN Population Division and circulated with member states as well as feeding into a 2008 WHO World Health Report which was disseminated to the House of Commons International Development Committee.

‰ In 2008, the research group was commissioned by the Norwegian Prime Minister to report on the progress of Millennium Development Goals 4 (to reduce child mortality) and 5 (to improve maternal health). This report was presented to global leaders at a UN high-level event leading to a renewed focus on maternal and child health.

- The Centre for Global Health Population, Poverty and Policy (GHP3) at the University of Southampton, co-produced the 'Atlas of Birth', representing the global picture of maternal health. This was disseminated in 2009/10 to G8 members and the African Union.

- The research team have acted as advisors to DFID on improving women's access to reproductive health services in Africa. DFID's subsequent Strategy for Reproductive, Maternal and New-Born Health (2010) was used in prioritising £200m-worth of funding.

- Research focused on informal settlements in Nairobi was shared with District Medical Officers and influenced service provision with the construction of two new maternity facilities. These are expected to serve 200,000 people.

## Underpinning research

The GHP3 centre, partners and predecessors research activities included the following:

- Findings from a literature review produced by the research team (while on secondment to the WHO) on maternal and new-born survival rates, through a global policy lens, demonstrated that a team of midwives and midwife assistants were the most efficient solution to overcoming the lack of skilled clinical professionals.

- APHRC empirical research (2004-2012) which challenged the assumption that urban residents in Kenya and other African countries had better health outcomes than those in rural areas. The maternal mortality rate of those based in informal communities was found to be 25% higher than the national average and, in general, with poorer child health outcomes.

- A 2010 data analysis study from 30 LMICs further demonstrated that there was no urban healthcare advantage in relation to child survival.

- A situation analysis of quality of care within institutional maternity services in impoverished communities in Mumbai. Key findings highlighted that essential drugs and appropriate procedures were lacking and women felt unsupported.

## Evidence of impact

**Policy documents:**

- 'Choices for women: Planned pregnancies, safe births and healthy newborns'; The UK's Framework for Results for improving reproductive, maternal and newborn health in the developing world, DFID (2010) [Hyperlink]

- House of Commons International Development Committee. Maternal Health: Fifth report of Session 2007-2008, Volume II, Oral and Written Evidence (2007). [Hyperlink]

‰ Network of Global Leaders Annual Reports: Leading by Example — Protecting the most vulnerable during the economic crisis, The Global Campaign for the Health Millennium Development Goals (2009) [Hyperlink]

‰ United Nations Expert Group Meeting on Population Distribution, Urbanization, Internal Migration and Development, New York, 21-23. Department of Economic and Social Affairs, Population Division. ESA/P/WP.206 (2008) [Hyperlink]

‰ World Health Organisation (2005), *World Health Report 2005*, W. Van Lerberghe (Editor in Chief) with Matthews, Z, Manuel, A, Wolfheim, C, WHO, Geneva [Hyperlink]

**Selection of publications:**

‰ Koblinsky, M, Van Lerberghe, W and Matthews, Z et al. (2006), 'Going to scale with professional skilled care', *The Lancet*, 368; 9544:1377-1386 [Hyperlink]

‰ Matthews, Z, Channon, A, Neal, S, Osrin, D, Madise, NJ et al. (2010) 'Examining the 'urban advantage' in maternal healthcare in developing countries', *PLOS Medicine* 7 (9), e1000327. [Hyperlink]

‰ Stephenson, R, Basheiri, A, Clements, S, Hennik, M, Madise, NJ (2006), 'Contextual influence on the use of health facilities for childbirth in Africa, *Am. J. Public Health*, 96 (1) 84-93. [Hyperlink]

‰ Ziaraba, AK, Madise, NJ, Mills, S, Kyobutungi, C, Ezeh, A (2009), 'Maternal Mortality in the informal settlements of Nairobi city: What do we know?', *Reproductive Health*, 6:6. [Hyperlink]

‰ UNFPA (Named Contributors: Madise, N, Matthews, Z and Neal, S) (2011), *The State of the World's Midwifery 2011: Delivering Health, Saving Lives.* [Hyperlink]

**Other resources:**

‰ Atlas of Birth website [Hyperlink]

‰ REF Impact Case Study [Hyperlink]

## Get in touch

**UKCDR**
c/o Wellcome Trust
Gibbs Building
215 Euston Road
London
NW1 2BE
UK

**t:** +44 (0)20 7611 8327
@UKCDR
info@ukcdr.org.uk

**ukcdr.org.uk**