

# HEART

HIGH-QUALITY TECHNICAL ASSISTANCE FOR RESULTS



## MAPPING OF UNITED KINGDOM INVESTMENTS IN RESEARCH, SCIENCE, TECHNOLOGY, AND INNOVATION IN UGANDA

Phase 1: Interim Report

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## Executive summary

### Introduction

In July 2019, a UK–Uganda High-Level Forum (HLF) was formed to provide strategic guidance on future and priority research and science, technology, and innovation (STI) investments in Uganda. To inform decisions about future UK investment, the HLF commissioned a comprehensive overview of current STI investments. This interim report summarises the findings of a rapid mapping of UK public and private investment related to STI in Uganda, focusing on the HLF priority sectors of health, enterprise, and climate change. The mapping relies on publicly available information for the public sector data, and primarily on market intelligence databases for the private sector data.

### Public sector data analysis

Public sector data mapping identified 54 Uganda-specific projects and 54 multi-country projects that include Uganda, with a total investment of £175 million. The Department for International Development (DFID) and the Department for Business, Energy and Industrial Strategy (BEIS) are the main sources of UK public investment in STI projects in Uganda. BEIS funds 74 projects, with a total value of £83.5 million; DFID funds 15 projects, with a total value of £81.5 million. The Department of Health and Social Care (DHSC) funds 16 multi-country projects that include Uganda; Uganda's estimated share of funding through these projects is £9.3 million.

Health accounts for the largest number of projects funded, but investment in climate change-related projects accounts for a larger share of total investment (50%) than health (42%). UK-funded climate change-related projects fall into the following categories: energy (affordable, reliable, renewable, and/or sustainable energy); climate resilience (forecasting and/or resilience related to short-term environmental shocks and long-term climate change); agriculture (secure and resilient farming and agricultural systems); sustainable cities; waste management; clean water; and climate-related policy. UK-funded enterprise-related projects fall into the following categories: agriculture (new practices, products, and markets); energy (hydropower, mini-grid networks); education (skills development); business (small firm development); and communications (mobile technology). UK-funded projects in the health sector address a wide range of issues: almost half focus on research relating to human immunodeficiency virus (HIV), other communicable diseases, or maternal, newborn, and child health.

### Private sector data analysis

Private sector investments captured include those which meet the definition for foreign direct investment (FDI), as well as equity and debt capital raisings. The UK investments identified include 33 FDI deals involving UK parent companies and Ugandan subsidiaries; 36 equity or debt deals involving the Commonwealth Development Corporation (CDC) as an investor motivated by financial and social returns; and a third group of 16 assorted debt and equity deals between UK and Ugandan firms. Because there are so few, and there is not enough information available on some investments to determine if they meet STI criteria, all investments and all sectors were included. This captured important infrastructure investments involving UK participation, which are significant in value and well aligned with Uganda's Vision 2040 objectives. Where investment value was available, it shows that the highest value investments are in the oil and gas sector and infrastructure sector.

UK private investment in Uganda since 2015 has been growing and diversifying, including but not limited to Uganda's traditionally FDI-attractive sectors of agriculture, mining, and oil and gas. Only four subsidiaries were held during 2011–14, but between 2015 and 2019 an additional 29 companies have invested, in a wide range of business sectors. UK private investment with an STI component is well aligned with national priorities, including infrastructure investment, financial services, and telecommunications infrastructure. There are also investments aimed at adding value to product sectors through technology and innovation (e.g. using improved genetics and animal husbandry practices to deliver quality meat, enabling increases in value chain efficiencies, post-harvest processing in agriculture, human and animal healthcare products, industrial gas supply) and investments in services sectors (e.g. transport, insurance, recruitment, real

estate). There are 13 private sector investments that are relevant to climate change; nine of these are focused on hydropower generation, two on solar power, and two on sustainable forestry. Two of these investments are made by private companies and the remainder are CDC funded.

Was the HLF's requested mapping focus on health, enterprise, and climate change appropriate? For the public sector investments, the mapping focus to these three sectors was appropriate, although it should be noted that quite a wide definition was used for climate and enterprise. However, the 3 sector focus was too limiting for mapping private sector investment; strict adherence to these 3 sectors would have missed important UK infrastructure investments in terms of magnitude and of STI contributions to national development objectives.

### **Alignment of UK investments with Ugandan priorities**

**Climate change:** UK public and private investment in climate change projects – which focus on areas including climate change resilience and mitigation, renewable energy, sustainable infrastructure, sustainable natural resource use, and waste management – is well aligned with Ugandan priorities.

**Enterprise:** UK private sector investment in enterprise includes agriculture post-harvest processing and value addition, and support to consumer goods and the services sector. It also includes investments to support the enabling environment for enterprise development (natural resource extraction, energy generation, financial services, insurance, telecoms infrastructure, business parks, airport, support to small- and medium-sized enterprises (SMEs), and linking small farmers with markets). UK private finance is contributing to alleviating the 'binding constraints' identified in the National Development Plan (NDP) II, including poor infrastructure, erratic energy supply, and high energy tariffs. UK public sector investment is well aligned with Ugandan objectives relating to energy production and access, the enabling environment for enterprise development, and strengthening the resilience and value add of the agriculture sector, but less so with the sector growth opportunities identified in NDP II.

**Health:** UK public sector investment is reasonably well aligned with some of the priorities identified in NDP II – in particular, projects focusing on specific disease areas. There is research ongoing in HIV, TB, malaria, non-communicable diseases (NCDs), neglected tropical diseases, mental health, clinical services, and quality of care. Few projects currently funded address the potential for STI to strengthen other priority areas, such as health financing and health service delivery, or focus on research into health determinants. There is also little focus on medical technologies, identified as a future priority by the Ministry of Science, Technology and Innovation (MoSTI).

**Opportunities to improve alignment of UK investments with Ugandan priorities:** A more strategic approach to funding STI and sector projects and, specifically, support to: better planning and a STI sector-wide approach; research and development (R&D) grants mechanisms, incubation hubs and STI parks; research, commercialisation, and skills development in priority sectors; and improving yield from intellectual property (IP) capacity-building efforts.

**Recommendations for future mapping exercises:** Broaden the sector focus to capture STI-enabling private sector investment; ensure the level of effort in mapping UK investments is commensurate with the value it provides to inform decision-making on future investments; allow enough time for sharing data; allow enough time for joint working with national counterparts in data analysis and assessment of alignment; and analyse data according to standard UK and OECD Development Assistance Committee (DAC) sector codes in order to increase the efficiency of mapping.

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## List of abbreviations

BEIS	Department for Business, Energy and Industrial Strategy (UK)
CDC	Commonwealth Development Corporation
DAC	Development Assistance Committee (OECD)
DFCU	Development Finance Company of Uganda Bank Limited
DFID	Department for International Development (UK)
DHSC	Department for Health and Social Care (UK)
FDI	Foreign direct investment
GCRF	Global Challenges Research Fund
GtR	Gateway to Research (UKRI)
HIV	Human Immunodeficiency Virus
HLF	High-Level Forum
ICT	Information and communication technology
IP	Intellectual property
IT	Information technology
JGHT	Joint Global Health Trials Scheme
M4D	Mobile for Development
MoSTI	Ministry of Science, Technology and Innovation (Uganda)
MRC	Medical Research Council
MW	Megawatt
NCD	Non-communicable disease
NDP	National Development Plan
NGO	Non-governmental organisation
NIHR	National Institute for Health Research
NU-TEC	Northern Uganda Transforming the economy through climate-smart agribusiness'
ODA	Official development assistance
OPM	Oxford Policy Management
R&D	Research and development
SID	Statistics in Development
SDP	Sector Development Plan
SDGs	Sustainable Development Goals

SME	Small and medium-sized enterprise
STI	Science, technology, and innovation
TOR	Terms of reference
UCL	University College London
UIPE	Uganda Institution of Professional Engineers
UIRI	Uganda Industrial Research Institute
UK	United Kingdom
UKCDR	UK Collaborative on Development Research
UKEF	UK Export Finance
UKRI	UK Research and Innovation
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
UVRI	Uganda Virus Research Institute
UGX	Ugandan shillings
WFP	World Food Programme
WISER	Weather and Climate Information Services for Africa



## 1 Introduction

The UK Government has a long history of investing in Uganda. In July 2019, a UK–Uganda HLF was formed to provide strategic guidance on priority research and STI investments in Uganda that align with mutual interests, Ugandan national priorities<sup>1</sup>, and global frameworks such as Agenda 2030. Information about the extent of UK public and private sector investment in STI in Uganda is limited and the HLF commissioned Oxford Policy Management (OPM) to conduct a mapping exercise to provide a more comprehensive overview. The mapping was expected to: determine the scope, related partnerships, and impact of UK investments; determine the scope of investment in STI in Uganda by other major countries and donors; and identify gaps and opportunities for future UK investments and partnerships. These tasks were to be addressed in two phases<sup>2</sup>:

- **Phase 1:** Validating priority sector and STI definitions with key stakeholders; and mapping UK public and private investments, relying on publicly available information for the public sector data and on market intelligence databases for the private sector information.
- **Phase 2:** Validating and building on the publicly available information on public sector investments through targeted data requests to UK government departments and partners; identifying partnerships and outputs resulting from UK investments; mapping investment in STI in Uganda by other major countries and donors; and identifying gaps and opportunities for future UK investment.

### 1.1 Scope, definitions, and framework

The mapping in Phase 1 focused on the following:

- **Investment source:** Public sector investment focusing on direct UK official development assistance (ODA) funding and government departments providing the most significant investment (BEIS, DFID, and DHSC), UK Research and Innovation (UKRI), and other government agencies as appropriate; Wellcome Trust, as a significant UK research investment source; and direct private sector investment in STI in Uganda.
- **Investment timeframe:** Investment during the five-year period 2015–2019. However, given the different start and end dates of projects, public sector investment starting prior to 2015 but continuing into 2015–2019 and starting during 2015–2019 and continuing after 2019 was also included (Annex C). Projects that ended before 2015 were not included.
- **Investment sector:** Sectors relevant to Ugandan national priorities and the Sustainable Development Goals (SDGs), but with a specific focus on three priority ‘sectors’ identified by the HLF: health, enterprise, and climate change.

There is no commonly agreed definition of what constitutes ‘science’, ‘technology’, or ‘innovation’. For the purposes of the mapping, we agreed with stakeholders to use the following definitions<sup>3</sup>:

- **Science** is the process of generating knowledge based on evidence. It implicitly includes both natural sciences (biology, chemistry, physics, mathematics, and related disciplines) and social sciences (economics, sociology, anthropology, politics, law). According to this definition, all UK-funded research was included in the mapping.
- **Technology** is the application of scientific knowledge, and frequently involves invention, i.e. the creation of a novel object, process, or technique.
- **Innovation** is the process by which inventions are produced, which may involve the bringing together of new ideas and technology, or finding novel applications of existing technologies.

<sup>1</sup> Identified in documents including Vision 2040, NDP II, and the Science, Technology and Innovation Sector Development Plan (STI-SDP).

<sup>2</sup> Text for Phase 1 and 2 tasks taken from the client-approved Final Inception Report for this mapping exercise, 2 December 2019 (Annex B).

<sup>3</sup> Source: Delaney, S. *et al.* (2010) ‘Science and Innovation for Development’, UKCDS, London, UK, [www.gov.uk/dfid-research-outputs/science-and-innovation-for-development](http://www.gov.uk/dfid-research-outputs/science-and-innovation-for-development)

The scope of the mapping of private sector investment included FDI investments and capital raisings (equity and debt investments). The following definitions were used:<sup>4</sup>

- Although strictly speaking the term **investment** refers to an asset or item acquired with the goal of generating income or appreciation, public funds can also be ‘invested’ with the goal of producing health, social, or welfare gains. Thus the term investment in this report does not only refer to investments expected to generate a financial return.
- **FDI** is an investment made by a firm or individual in one country in business interests located in another country. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets in a foreign company. FDI can be made in a variety of ways, including the opening of a subsidiary or associate company in a foreign country, acquiring a controlling interest in an existing foreign company, or by means of a merger or joint venture with a foreign company. FDI is distinguished from portfolio investments in which an investor purchases equities of foreign-based companies.

When classifying types of research, the following principles were applied:

- **Social science:** The study of individual human behaviour as individuals and in groups.
- **Basic research:** Involves questions and investigative practices that are focused on discovering or formulating fundamental principles.
- **Applied research:** Is concerned with practical knowledge, is outcome-focused rather than theory-focused, and involves the application of existing knowledge to solve problems, to be contrasted with **applied science**, which involves knowledge being put towards producing a product for public interest, and perhaps developing its commercial value.

Data collection and analysis (see Annex A) was framed around three broad areas of inquiry:

- **Investment magnitude and source:** What is the estimated amount of UK Government and private investment in STI in the priority sectors in Uganda?
- **Investment distribution:** Where does UK investment in STI go?
- **Investment alignment:** To what extent is UK Government investment in STI aligned with Ugandan national development priorities? To what extent is the HLF strategic focus on health, climate change, and enterprise appropriate?

## 1.2 Interim report

This interim report summarises the preliminary findings from Phase 1 and is organised as follows. **Section 2** summarises the mapping findings on public sector investments by i) magnitude and source, ii) priority sector, and iii) UK research institution; it also summarises Wellcome Trust investment, categorised by type of research, type of disease, and recipient institution in the UK and Uganda; and finally it summarises private sector investments, categorised by i) deals with Ugandan firms by all sources categorised by sector 2015 to present, ii) UK firms with subsidiaries in Uganda categorised by sectors, iii) CDC investment into Uganda categorised by sectors, and iv) other deals. **Section 3** discusses Uganda’s STI sector priorities, the degree of alignment of UK investments with those, and recommendations to increase alignment.

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<sup>4</sup> Investopedia Dictionary.

## 2 Mapping findings

### 2.1 Public sector investment

In the mapping, projects funded by the UK Government were categorised as: 1) Uganda-only projects; and 2) multi-country projects that include Uganda where the share of budget invested in Uganda is known or can be estimated reasonably confidently (i.e. if a project covers fewer than five countries)<sup>5</sup>. Multi-country projects that include Uganda where it is not feasible to estimate Uganda's share of total investment were not included in the mapping. Relevant public sector investments identified and included in the mapping (see project summary table in Annex D) were categorised by:

- funding source (e.g. UK government department and, where appropriate, funding mechanism, e.g. Global Challenges Research Fund (GCRF), or institution, e.g. research council);
- total budget or share of budget (where a multi-country project);
- priority sector (health, climate change, enterprise);
- sector (using relevant Devtracker codes)<sup>6</sup>;
- implementing/recipient organisation (e.g. university, research institution, private sector organisation); and
- timeframe (start date and end date where this information was available).

In some cases projects could have been categorised in both the climate change and enterprise sectors. In such cases, allocation was based on an analysis of OECD DAC sector codes and a review of project documents, including business cases and annual reviews, where available.

Analysis of investment by geographical area within Uganda was not feasible as this is not specified for most projects. Exceptions include: in the climate change sector, 'Enhancing resilience in Karamoja, Weather and Climate Information Services for Africa' (WISER), which focuses on the Lake Victoria area, and 'Future Climate for Africa', which focuses on Mukono; in the health sector, the 'Karamoja Nutrition Programme', and 'Mental health among HIV-infected children and adolescents in Kampala and Masaka'; and in the enterprise sector, 'Northern Uganda Transforming the economy through climate-smart agribusiness' (NU-TEC), and 'Skills acquisition and employability through volunteering by displaced youth in Northern Uganda'.

A total of 54 Uganda-specific projects and 54 multi-country projects that include Uganda, with a total investment of £175 million, were included in the mapping.

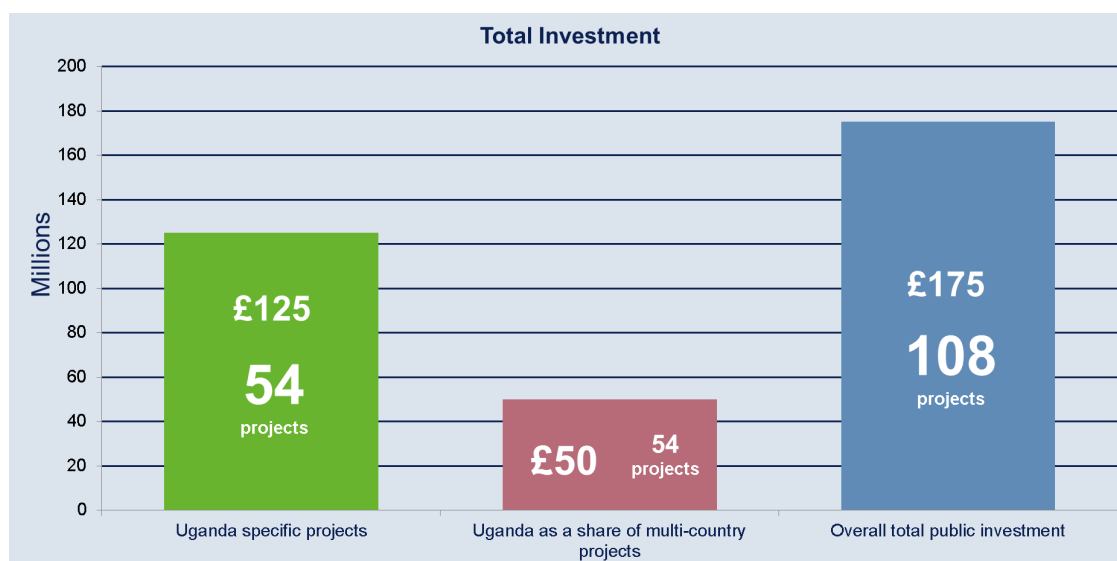
#### 2.1.1 Investment magnitude

Mapping of public sector investment identified 54 Uganda-specific projects (Annex D) relevant to the three priority sectors and STI (out of a total of 371 Uganda-specific projects in Devtracker and UKRI's Gateway to Research (GtR)). Total investment in these 54 projects is £125 million. An additional 54 multi-country projects that include Uganda and are relevant to the priority sectors and STI were identified (Annex D). The estimated Uganda share of total investment in these projects is £50 million. Together, these represent a total UK investment in 108 projects of £175 million (Figure 1).

<sup>5</sup> For example, if a research project covers Uganda and Malawi, we estimated that 33% of the total budget is invested in Uganda, with the other 66% shared between the UK lead organisation and Malawi.

<sup>6</sup> These include: agricultural; banking and financial services; business; communications; environment; health; industry; and multisector.

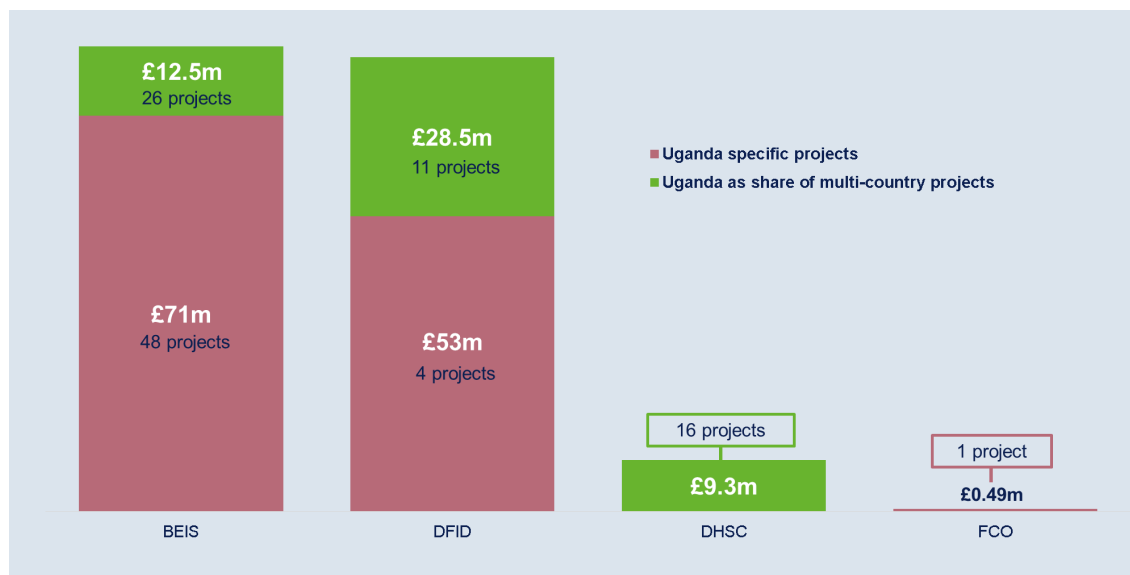
**Figure 1: Public sector investment in health, enterprise, and climate change STI-related projects in Uganda**



**2.1.2 Investment by funding source**

As Figure 2 shows, BEIS funds by far the largest number of projects identified as relevant by the mapping – 48 Uganda-specific projects and 26 multi-country projects that include Uganda. DFID funds 15 projects identified as relevant – four Uganda-specific projects and 11 multi-country projects. The mapping also identified 16 multi-country projects that include Uganda funded by DHSC and one Uganda-specific project funded by the Foreign and Commonwealth Office.

**Figure 2: Total number of projects and investment by funding source**



However, as Figure 2 also shows, DFID and BEIS account for a similar share of investment. DFID’s estimated investment is £81.5 million (£53 million through Uganda-specific projects and £28.5 million through multi-country projects). BEIS’s estimated investment is £83.5 million (£71 million through Uganda-specific projects and £12.5 million through multi-country projects). DHSC funding through 16 multi-country projects is around £9.3 million.

Analysis of BEIS-funded projects by funding mechanism, based on data available in UKRI’s GtR, identified 25 projects: 10 projects that are Uganda-specific and 15 multi-country projects that include Uganda – funded through GCRF, the Newton Fund, and Innovate UK. As Table 1 shows, of these mechanisms, GCRF funds the largest number of projects.

**Table 1: Number of BEIS-funded projects by funding mechanism**

Funding mechanism	Number of projects: Uganda-specific	Number of projects: Uganda as share of multi-country projects
GCRF	8	13
Innovate UK	2	1
Newton Fund	-	1
Total	10	15

Analysis of relevant projects in UKRI's GtR by research council identified 67 projects – 45 projects that are Uganda-specific and 22 multi-country projects that include Uganda. As Table 2 shows, the Medical Research Council (MRC) accounts for the largest number of projects; this is consistent with the sector distribution of projects, with the highest number identified in health (see Section 2.1.3.3.).

**Table 2: Number of projects by research council**

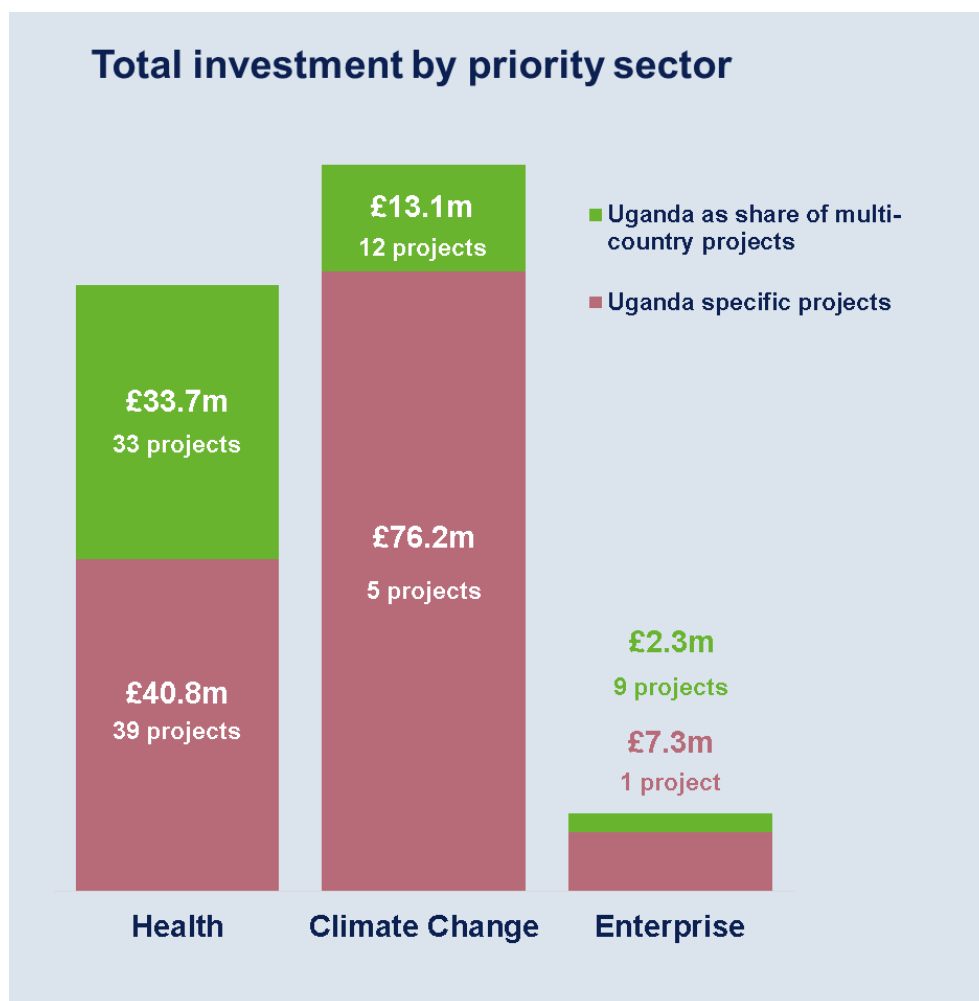
Organisation	Number of projects: Uganda-specific	Number of projects: Uganda as share of multi-country projects
MRC	34	14
Economic and Social Research Council	6	2
Biotechnology and Biological Sciences Research Council	3	-
Engineering and Physical Sciences Research Council	1	2
Natural Environment Research Council	1	1
Royal Academy of Engineering	-	3
Total	45	22

### 2.1.3 Investment distribution by priority sector

Analysis of the 54 Uganda-specific projects by priority sector (Figure 3) shows that health accounts for the largest number of projects (39), followed by enterprise (7), and climate change (5). But, as Figure 3 also shows, climate change-related projects account for the largest share of investment (£76.2 million), followed by health (£40.8 million), and enterprise (£7.3 million).

Among the 54 multi-country projects that include Uganda, health again accounts for the largest number (33), followed by climate change (12) and enterprise (9). Health accounts for the largest share of estimated investment (£33.7 million), followed by climate change (£13.1 million) and enterprise (£2.3 million).

**Figure 3: Total number of projects and total investment by priority sector**



A more detailed breakdown of Uganda-specific and multi-country projects funded within the three priority sectors is provided below.

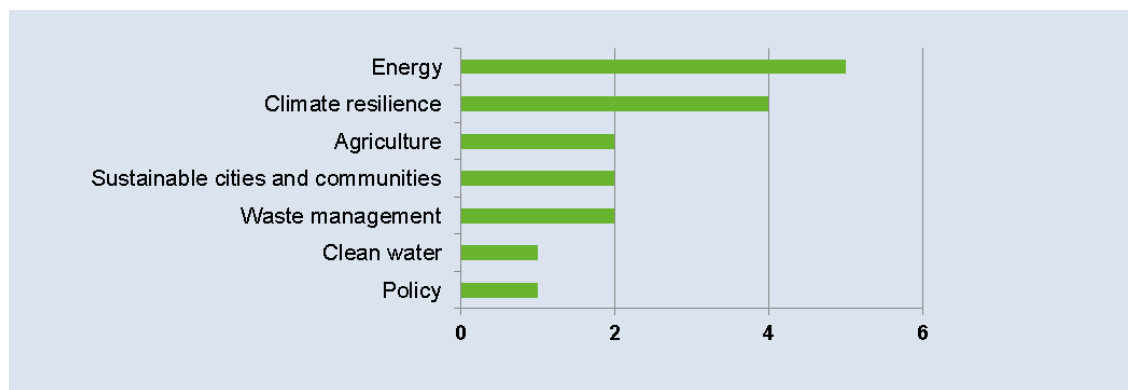
### 2.1.3.1 Climate change

UK-funded climate change-related projects fall into the following categories: energy (affordable, reliable, renewable, and/or sustainable energy); climate resilience (forecasting and/or resilience related to short-term environmental shocks and long-term climate change); agriculture (secure and resilient farming and agricultural systems); sustainable cities; waste management; clean water; and climate-related policy. Most projects are in the first two categories (see Figure 4).

Uganda-specific project examples include: support to strengthen regulatory systems and tariffs to ensure the sustainability of small-scale on-grid renewable energy projects; initiatives to improve the forecasting of flood risk and to model the impact of climate on agriculture through the development of an early warning platform; and the use of renewable irrigation technology to increase the efficiency of farming.

Examples of multi-country projects include: increasing the use of renewable energy sources through the Cities and Infrastructure for Growth and Africa Clean Energy projects. The latter includes testing innovative approaches to stimulate private sector investment in solar energy systems and services; improving climate science and information to inform decision-making through WISER and the Future Climate for Africa projects; supporting early-stage testing and scale-up of innovative technologies and business models to accelerate access to clean and affordable energy through the Transforming Energy Access project; and improving waste management to reduce marine plastic pollution. An example of innovation and technology transfer is the 'Bio-energy, fertilisers and clean water from invasive aquatic macrophytes (e.g. water hyacinth) project', involving the UK, India, and Uganda.

**Figure 4: Climate projects**



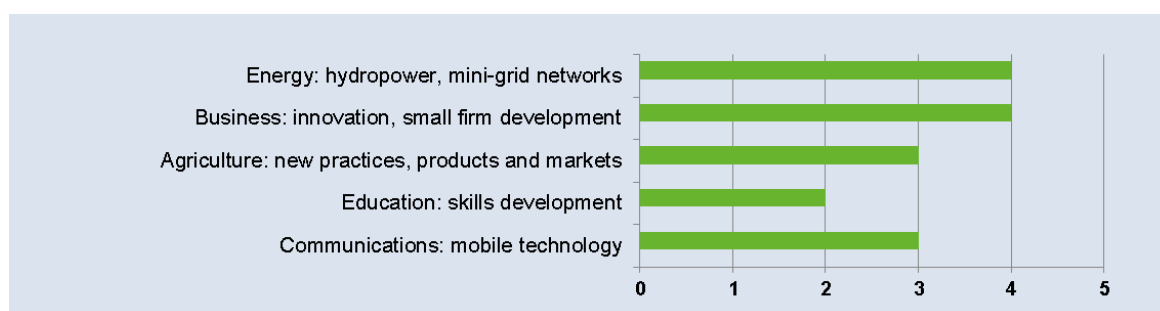
**2.1.3.2 Enterprise**

UK-funded enterprise-related projects identified during the mapping broadly fall into the following categories: agriculture (new practices, products, and markets); energy (hydropower, mini-grid networks); education (skills development); business (small firm development); and communications (mobile technology), with most relating to energy and innovation in business or agriculture.

Uganda-specific project examples include: support to farmers to adopt new practices and products, and for market development (NU-TEC); uptake of nematode-resistant banana lines; enhancing essential oil feed stocks and high-value products from menthol species; and prospecting for micro hydropower sites on rivers using satellite technology.

Examples of multi-country projects include: increasing energy access through distributed pumped micro-hydro power and clustering mini-grid networks; supporting innovative use of mobile phone technology and infrastructure to improve service delivery through the Mobile for Development (M4D) Strategic Partnership; and various initiatives managed by the Royal Academy of Engineering to provide support for engineering businesses, to encourage more women to enter the engineering profession, and to strengthen engineering training in tertiary education institutions in partnership with the Uganda Institute of Professional Engineers and Makerere University.

**Figure 5: Enterprise projects**



**2.1.3.3 Health**

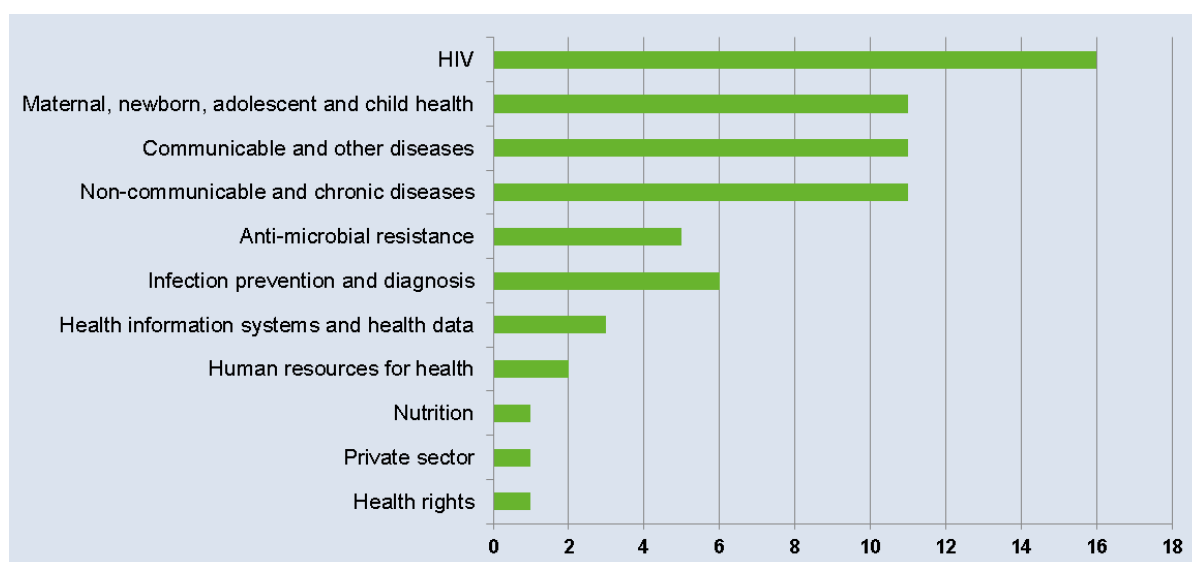
UK-funded projects identified in the health sector address a wide range of issues. However, as Figure 6 below shows, almost half focus on research relating to HIV, other communicable diseases, or maternal, newborn and child health, and they also focus on more traditional academic research.

Uganda-specific project examples that have a focus on technology and innovation include: a project with Makerere University to explore the potential use of data science and electronic data sharing to improve health; support for the MRC Uganda Virus Research Institute (UVRI) Medical Informatics Centre to increase the capacity to benefit from developments in genomics and medical informatics; and a randomised trial of a simple and affordable intervention – the provision of alcohol hand gel in health facilities – that could help to prevent infection, implemented by the University of Liverpool and funded by the MRC. Projects that have the potential to translate into patent applications and registrations include HIV vaccine research being conducted

by the MRC UVRI, and (through the multi-country UK Vaccines Network) Rift Valley fever vaccine research also being conducted by the MRC UVRI.

Examples of multi-country projects are diverse and include: DHSC-funded Fleming Fund support to strengthen anti-microbial resistance surveillance in partnership with the Uganda Infectious Diseases Institute; research on timely blood transfusion for women with post-partum haemorrhage and treatment of severe anaemia in children; improving health system responses to chronic diseases; developing low-cost diagnostic tools; and the use of mobile phone technology for community pharmacy provision of anti-retrovirals for people with HIV, and for improving palliative cancer care.

**Figure 6: Health projects**



### 2.1.4 Investment distribution by UK research institution

Analysis of available data in UKRI’s GtR for both Uganda-specific projects and multi-country projects that include Uganda shows that UK universities and academic institutions are the main lead organisations for STI projects in Uganda. Table 3 shows the top 10 institutions.

**Table 3: Number of projects by UK lead institution**

UK institution	Number of projects
London School of Hygiene and Tropical Medicine	12
Liverpool School of Tropical Medicine	8
University of Leeds	4
University of Oxford	5
University College London	4
University of Glasgow	3
University of Liverpool	3
University of Cambridge	2
University of Reading	2
Queen Mary University of London	2

As noted in the limitations (see Annex A), publicly available data sources do not provide detailed information about country partners or recipients of funding, so accurate and comprehensive analysis for all projects identified by the mapping exercise is not possible. Based on projects for which this information is available, the leading partners or recipient institutions in Uganda are UVRI and Makerere University; other partners include the Uganda Infectious Diseases Institute, the Uganda National Meteorological Agency, the Uganda Institute of Professional Engineers, and local non-governmental organisation (NGOs).



## 2.2 Wellcome Trust investment

Using the geographical search tool on the Wellcome Trust website, 13 grants were identified as Uganda-related (Annex F). All of these grants fund research and are in the health sector.

- Eight of the grants focus on applied research, i.e. research which has a practical, nearer-term application to solving a problem. These include research to improve palliative care, improve malaria management, and mental health care; and studying the effectiveness of an existing drug for a new indication in treating HIV-associated cryptococcal meningitis<sup>7</sup>.
- Four of the grants focus on basic research, including livestock–wildlife transmission networks of African swine fever, tsetse population dynamics in human African trypanosomiasis foci, and molecular changes in mosquitoes that make them resistant to insecticides.
- One grant was categorised as social science research.

Of the 13 grants, three focus on malaria, three on HIV, and the rest on a variety of health issues, including chronic respiratory disease, asthma, neglected tropical diseases, and animal health. Some of the grants support research fellowships. Some, such as those grants under the Joint Global Health Trials Scheme, may be duplicated in other datasets searched for the mapping.<sup>8,9</sup>

The Liverpool School of Tropical Medicine and London School of Hygiene and Tropical Medicine have the highest number of grants from Wellcome Trust, while Makerere University and UVRI are the most frequently cited Ugandan research partners. (Annex F provides the full list of UK and Ugandan institutions receiving Wellcome Trust grants). Information on grant value is not available.

## 2.3 Private sector investments

Private sector investments captured include those which meet the definition of FDI, as well as equity and debt capital raisings. The investment funds may originate from private sources, such as UK firms, banks, and equity funds, or from public funding sources, as in the case of UK Export Finance (UKEF) and CDC. The data included in this section come from market intelligence databases and news searches, as well as company and investor websites.

UK investments identified are quite heterogeneous, in terms of type of investment, type of investor, information source from which the data were captured, and information available. They can be described as a constellation of pockets of investment types: 33 FDI deals involving UK parent companies and Ugandan subsidiaries; 36 equity or debt deals involving CDC as an investor, motivated by financial and social returns; and a third group of 16 debt and equity deals between UK and Ugandan firms. All UK–Uganda financial deals identified have been included in the mapping because there are so few (33+36+16), and because there is not enough information available on some investments to determine if they meet our STI criteria. Where available information shows that investments are in the health, climate, or enterprise sectors, this has been noted. However, all sectors have been included because there are important infrastructure investments involving the UK that are significant in value and aligned with Vision 2040 objectives.

It is not possible to provide or estimate the magnitude of private sector investment: deal value is not publicly available and, in most cases, is subject to non-disclosure agreements. Therefore, the categorisation of investments by sector focuses on the volume, not value, of transactions. In the cases where investment value was available, it shows that the highest value investments are in the oil and gas sector and infrastructure sector, dominated by Tullow Oil and UKEF loans.

The data show that UK private investment in Uganda since 2015 has been growing and diversifying, including but not limited to Uganda's traditionally FDI-attractive sectors of agriculture, mining, and oil and gas. Infrastructure investment (hydropower, solar power, on- and off-grid, business parks, and airport),

<sup>7</sup> Note that the latter is jointly funded with DFID, DHSC, and MRC through the Joint Global Health Trials Scheme.

<sup>8</sup> A funder data request to the UK MRC would be required to ascertain this.

<sup>9</sup> An additional Wellcome Trust project – focused on corneal infection research in Uganda, Tanzania, and Nepal – was identified through a general news search on market intelligence databases. This suggests that a data request would be required in order to get a comprehensive view of all Wellcome-funded work in Uganda, including multi-country projects. This was the only project for which the grant funding value was available.

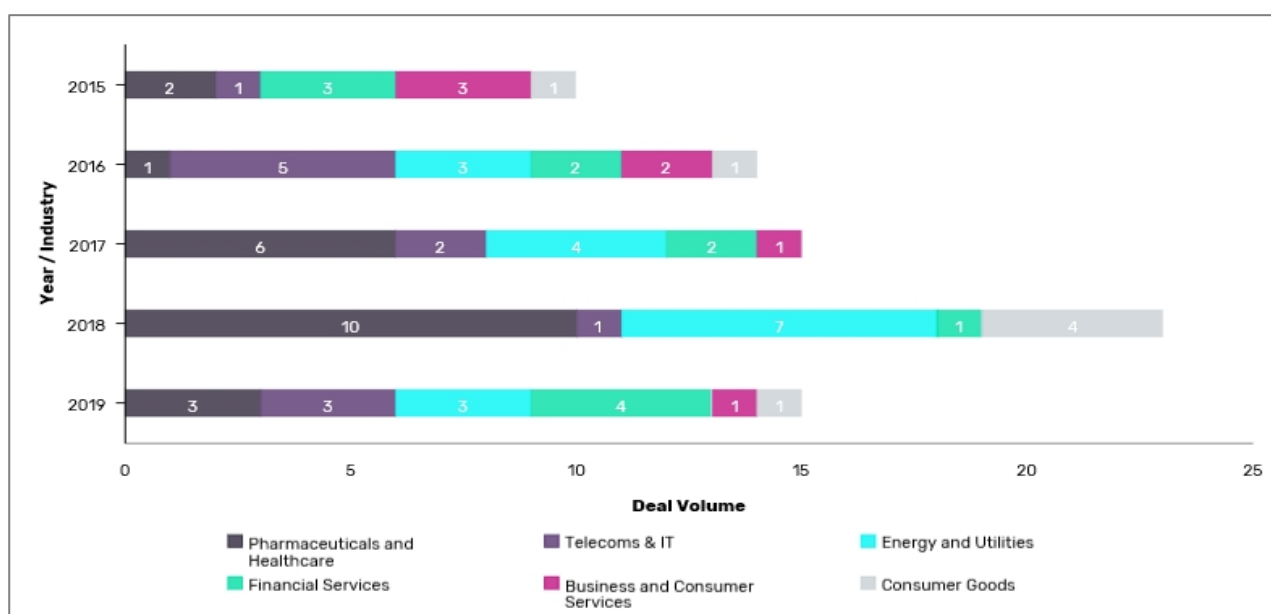
financial services (including those aimed at small entrepreneurs in focus sectors), and information and communication technology (ICT) telecoms infrastructure have featured strongly in recent years, and are well aligned to NDP II, the new STI SDP, and climate change priorities in particular.

### 2.3.1 Investment deals with Ugandan firms, all sources

By using several screens in the database MarketLine<sup>10</sup>, 175 investment ‘deals’<sup>11</sup> with Ugandan firms between 2015 and 2019 were identified. This includes investments from all sources – beyond the UK-centric scope of this mapping – but is useful to set the scene. Figure 7 below shows the total number of deals in different sectors by year. Deal activity peaked in 2018, with heightened activity in pharmaceutical and healthcare, as well as in energy and utilities and consumer goods.<sup>12</sup>

This deal pattern in volumes is in rough alignment with the pattern of overall FDI inflow value to Uganda over this time period (Table 4).

**Figure 7: Deal volume with Ugandan firms (all country sources) by sector and by year since 2015<sup>13</sup>**



**Table 4: FDI inflows to Uganda, millions of dollars<sup>14</sup>**

Year	2015	2016	2017	2018
FDI Inflows (Millions of dollars)	738	626	803	1,337

The 2018 peak in deal volume recorded in MarketLine is consistent with the pattern of deal value reported by the United Nations Conference on Trade and Development (UNCTAD), which notes that FDI to Uganda reached a historic high in 2018, with an increase of 67% to \$1.3 billion, largely due to investments in the oil and gas sector, as well as in manufacturing and the hospitality industry. The development of the country’s oil fields, led by a consortium made up of Total (France), CNOOC (China), and Tullow Oil (UK), was gaining momentum at that stage.

The UNCTAD 2019 report also notes that a small number of projects resulted in fast-growing FDI flows to Uganda, but from an extremely low basis, including some new investments in the processing of natural resources, which may support the industrialisation process and a move up the value chain, and other investments in the digital economy and new industries, such as the establishment of Fenix International

<sup>10</sup> MarketLine’s Industry Statistics database consolidates all the data from industry data files into a single web-based interface, enabling quick and easy comparative analysis and visualisation of market values, volumes, segmentation, and forecasts for over 120 industry sectors and 50 countries.

<sup>11</sup> See the Excel file deliverable for a comprehensive list of these 175 deals identified via MarketLine.

<sup>12</sup> A full listing of all 175 deals is available in the Excel spreadsheet deliverable provided as part of this mapping.

<sup>13</sup> Source: MarketLine-generated figure.

<sup>14</sup> UNCTAD (2019) ‘UNCTAD World Investment Report, Special Economic Zones’, UNCTAD, New York.

(France), a provider of solar energy equipment,<sup>15</sup> and the opening of Raxio, a data processing centre created by Roha (United States)<sup>16</sup>.

### 2.3.2 UK firms with subsidiaries in Uganda

UK firms which have invested in Uganda via the acquisition of a subsidiary Ugandan company are listed in Annex G. This information was obtained via the FAME database, which holds data for up to 10 years for 2.3 million listed, public and private companies in the UK and Republic of Ireland, by screening for Uganda as the International Organization for Standardization (ISO) country code for the subsidiary.<sup>17</sup> To provide a more complete list of UK investment activity with Ugandan companies we searched not only investments where the parent owns >50% but also ownership levels >25%. Specifically, we have included all data on UK–Uganda subsidiaries with more than 25% ownership for two main reasons:

- fDi Markets (a product of the *Financial Times*) analyses, which are available to the Economic and Trade Policy team at the British High Commission office in Uganda, have missed all but one of these UK subsidiary investments<sup>18</sup>; therefore it seems helpful to provide a more comprehensive picture, irrespective of whether these investments meet our criteria for STI and our sector screen for health, enterprise, and climate.
- The limited information available does not allow us to determine the degree of fit with STI criteria, except in cases where the subsidiary investment is picked up in a parallel database where more information is provided (as is the case with CDC), or where, upon review of the company website, it is clear that the STI criteria are met, as is the case with BOC Uganda Ltd, a subsidiary of Linde Public Limited which produces industrial gases.

Thirty-three UK companies currently have Ugandan subsidiary companies meeting the >25% cut-off ; in some cases more than one Ugandan subsidiary is held by a parent company. It was not possible to ascertain the value of the investments. If the subsidiary is a publicly traded company this would require further research to determine the market value of the company at the time the investment was made, and multiplying the stock price by the number of shares the parent company bought. If the subsidiary is a private company, valuation of the parent company's investment would be difficult, since private companies do not report their financials publicly.

UK interest in acquiring Ugandan subsidiaries has increased since 2011. Only four subsidiaries were held during the four-year period 2011–2014 (and two of these companies are heavily dependent on donor-financed contracts – Marie Stopes and Mott MacDonald). However, between 2015 and 2019, an additional 29 companies have invested, in a wide range of business sectors (Figure 8), including many blue chip companies such as Unilever, WPP, Diageo, and Prudential.

Three of the subsidiary investments that were identified via FAME are also included in the CDC website: Development Finance Company of Uganda Bank Limited (DFCU) financial services, Orient Bank, and Biyinzika Poultry. The latter two appear as investments made by 16 Miles and 20 Miles; this is because CDC works as a 'fund of funds' in many cases, routing its investments through other equity fund managers, including (as in this case) through Bob Geldof's venture fund, 8 Miles. Utkarsh microfinance does not appear on the CDC website, very likely because it had not been coded as related to Uganda when the data were entered.<sup>19</sup>

For the three priority sectors, two subsidiary investments are in the human and animal health sector – Marie Stopes (women's reproductive health) and VetPharm (veterinary products wholesale); only the New Forests Company sustainable forestry investment qualifies as climate-related. Arguably, many of these subsidiary investments meet the enterprise criteria – not only those that are supporting the enabling environment for

<sup>15</sup> [www.fenixintl.com/blog/solar-energy-leader-fenix-international-establishes-global-headquarters-uganda/](http://www.fenixintl.com/blog/solar-energy-leader-fenix-international-establishes-global-headquarters-uganda/)

<sup>16</sup> [www.raxio.co.ug/](http://www.raxio.co.ug/)

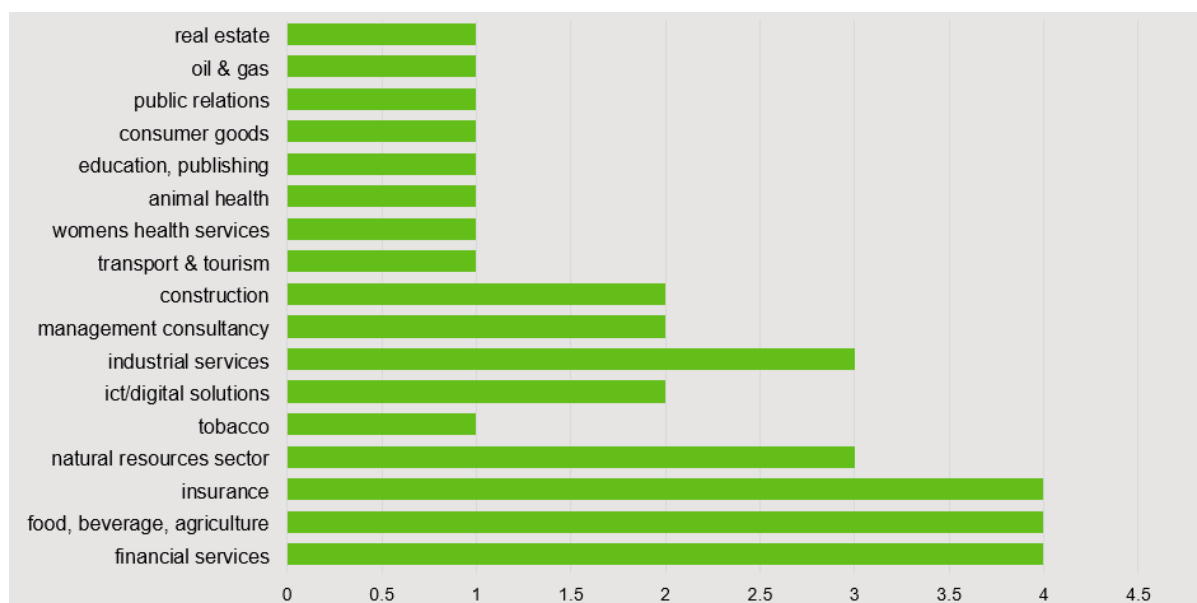
<sup>17</sup> Investopedia defines a subsidiary as a company that belongs to another (parent) company, whereby the parent company or the holding company holds a controlling interest in the subsidiary company, meaning it has or controls more than half of its stock.

<sup>18</sup> The only UK investment picked up by fDi Markets relates to Fastjet, a company owned by Lonrho Africa Holdings and picked up in the FAME database as an investment in African Expeditions Uganda Ltd.

<sup>19</sup> It may be that multi-country investments are not showing up when the Uganda geographic screen is used. CDC informants were not available to clarify this.

private sector development (e.g. financial services, construction, and ICT) but also those that more directly focus on the development of the goods and services production sector (e.g. food and beverage, publishing, public relations, recruitment services, air transport, industrial gas applications, and security solutions).

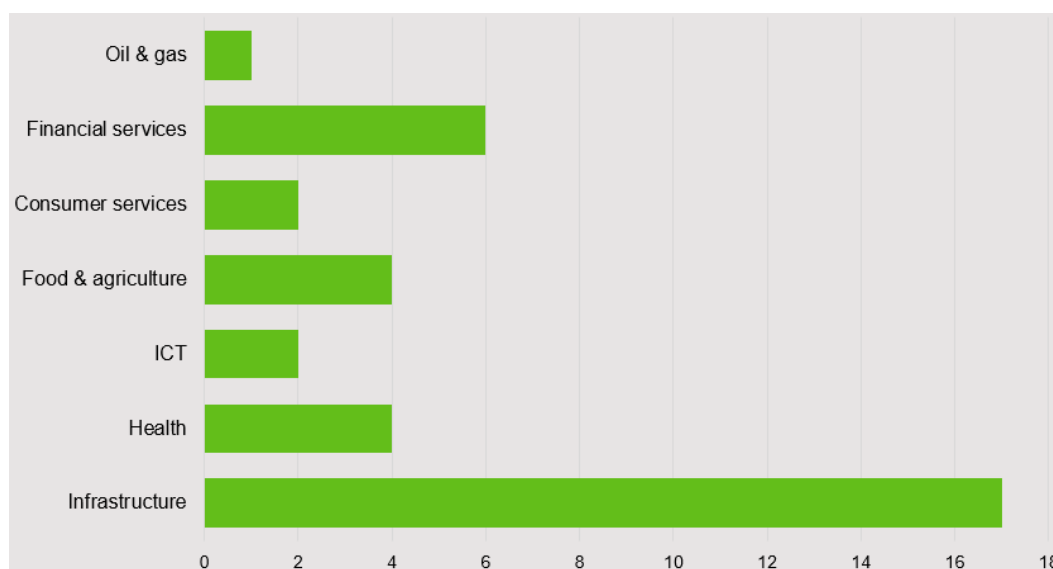
**Figure 8: Sector focus of Ugandan subsidiaries of UK companies**



### 2.3.3 CDC investment into Uganda

Applying the Uganda screen to investments on CDC’s website shows 36 active investments with Ugandan firms, 26 with a start date after 2015. The investment value is not available from the CDC website<sup>20</sup>. A CDC informant explained that it would not be possible to provide investment value information as: a) the majority of CDC investments are channelled through other equity fund managers, like the Africa Renewable Energy Fund, the African Rivers Fund, or 8 Miles, and; b) the investment value is confidential and protected by non-disclosure agreements. Where CDC provides a direct loan, as was the case with DFCU Bank and Bujagali Energy Ltd, the loan amount is available on the website and is captured in the Excel files provided with this mapping. CDC investments (Annex H) cover a range of sectors, with most (17) focused on infrastructure development.

**Figure 9: Sector distribution of CDC investments in Uganda<sup>21</sup>**



<sup>20</sup> Other than for direct CDC loans.

<sup>21</sup> See Annex H for the list of CDC investments

CDC's infrastructure investments have had a high concentration in the power generation sector, specifically hydropower, as highlighted by the following examples:

- Bujagali Energy Ltd owns and operates a 250 megawatt (MW) hydropower plant on the Nile River in Uganda. Commissioned in 2012, the plant supplies energy to the Ugandan electricity grid.
- Greenewus Energy Africa Ltd. is a special purpose vehicle established with the sole purpose of developing and implementing the Kakaka Hydro Power Project.
- The Nyamagasani 1 Hydro Power Project intends to utilise the hydro potential of the river Nyamagasani; Rwenzori Hydro Ltd is the project company for Nyamagasani 1 Hydro Power Project.
- Maji Power is an operational and development company established to provide construction and operational support in Ugandan hydro projects.
- Kikagati is a 16 MW greenfield project in south-western Uganda; a landmark private cross-border hydro project, it has improved collaboration between Uganda and Tanzania. The project will supply and boost electrification in an under-served part of Tanzania and help meet projected supply shortfall in Uganda.
- Achwa HPP3,4,5 is a portfolio of three hydro plants in the early development stage in Northern Uganda.
- Bugoye is a 13 MW operational hydro plant in Western Uganda developed and operated by Tronder Power, with Norfund as a minority shareholder.

CDC's hydropower investments are in line with the electricity generation expansion plans set out in the Vision 2040 strategy. The current contribution of hydropower in Uganda's electricity generation mix is 87% and, according to government sources, there is still over 2,000 MW of hydropower yet to be developed. Hydropower is therefore expected to continue to play a critical role in providing electricity in Uganda in the medium term. For Uganda to achieve sustainable development, the Honourable Minister of Energy and Mineral Development Irene Nafuna Muloni opines that 'the hydropower resources that remain untapped will have to be developed so as to bring to fruition plans aimed at increasing access to electricity and per capita electricity consumption, and to contribute to the achievement of the Sustainable Development Goals'.<sup>22</sup>

Since the beginning of 2017, CDC has also been an investor in M-Kopa, one of Africa's fastest growing, pay-as-you-go solar energy companies. M-Kopa currently provides off-grid energy to 500,000 low-income households in Kenya and Uganda. This investment was not picked up from the CDC website, most likely because it is a multi-country investment (although it was identified in Devtracker) and multi-country investments are not picked up using the Uganda geographic screen. Further details on the M-Kopa investment are provided in the climate change deep dive (Annex E).

Beyond power generation investments, CDC is active in many other sectors which appear to meet STI and priority sector criteria. This includes investments in the financial services sector, where CDC's investments aim to increase access to affordable mainstream finance to under-served markets. For example, CDC's investment in DFCU's Women in Business programme has supported several thousand businesswomen by providing loans at preferential rates, alongside training, networking opportunities, and mentor programmes. This enables female entrepreneurs to expand their businesses and to create direct and indirect jobs. DFCU also provides long-term development finance to the SME sector, which is a key driver of economic growth in the country. Other similar examples include CDC's investments in Orient Bank, GroFin, Uganda Finance Trust Limited, and Catalyst Microfinance Investment Management Company. Another sector in which CDC is active which appears to meet STI and priority sector criteria is sustainable forestry: CDC has invested in Global-woods AG, a forestry company in the Kikonda Forest Reserve in Uganda, which has been operating under a tree-farming licence to establish and manage the 12,182 hectare forest since 2002. A variety of tree species are grown in the plantation to produce saw-logs and fuel wood. Finally, CDC also invests in food and agriculture (e.g. poultry supply), consumer goods (e.g. haircare products), health, and ICT/telecoms, all of which also appear to meet the criteria for priority sectors and potentially for STI.

<sup>22</sup> [www.hydropower.org/sites/default/files/publications-docs/2019\\_hydropower\\_status\\_report.pdf](http://www.hydropower.org/sites/default/files/publications-docs/2019_hydropower_status_report.pdf)

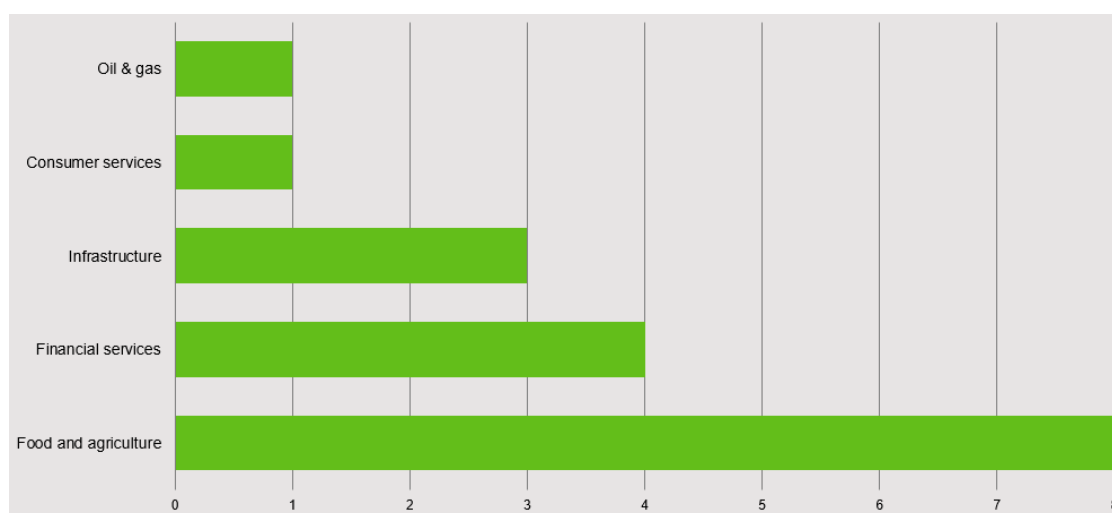
### 2.3.4 Deals identified through news articles

Sixteen further investments from 2015 to the present date were identified, many of which appear to be highly relevant to STI, the priority sectors, and to Government of Uganda priorities, as illustrated in the case study below (Box 1).

Three of the investments captured in this section relate to loans provided by UKEF. These include: i) the joint venture between the Ministry of Agriculture, Animal Industry and Fisheries and M/S Alvan Blanche and Colas Ltd described above; ii) the \$246 million loan for the development of Kampala Industrial and Business Park in Namanve, which will have 500 spaces for small-scale entrepreneurs; and iii) a \$215 million loan for the construction of New Ugandan Hoima International Airport, delivered by Colas' newly formed joint venture SBC – this venture is expected to close the infrastructure gap in Uganda. According to our interview with Colas Managing Director Lars Peter Jensen, there will be significant STI skills transfer and use of new technology, and 800 local jobs will be created.

Five of the investments discussed in this section are happening under a partnership with AgDevCo<sup>23</sup> and this explains why food and agriculture is the leading sector among the 16 investments covered in this section (Figure 10).

**Figure 10: Sector focus of 16 additional deals**




The above is comprised of: UKEF (3); AgDevCo (5); solar power park; fast food franchising; financial services; Tullow Oil.

<sup>23</sup> The AgDevCo website does not make clear whether it is acting as a funder or an intermediary. Wikipedia describes AgDevCo as follows: 'AgDevCo is a social impact investor and project developer working in the African agriculture sector. The company supports small and medium-sized enterprises involved in farming, agriprocessing, and logistics, with the aim of creating jobs and income-earning opportunities for African farmers.'

**Box 1: Case study of an ‘enterprise’ investment<sup>24</sup>**

The Ministry of Agriculture, Animal Industry and Fisheries partners with Alvan Blanch and Colas Ltd to improve post-harvest processing systems in Uganda.

Project description	<ul style="list-style-type: none"> <li>The joint venture between M/S Alvan Blanch Development Company and Colas Limited will manufacture, supply, install and commission multiple post-harvest processing systems. The memorandum of understanding (MoU) will also include delivery of related training and construction of associated infrastructure.</li> <li>The partnership aims to: improve the value of agricultural produce through the installation of value addition facilities; the ministry will establish collection centres for priority commodities by buying and installing 112 batch drying, cleaning and grading systems of grains, cereals such as maize, rice and pulses such as beans, soya beans across the country; procure and install 12 fruit processing plants in identified locations; increase storage facilities to accommodate increased processed output; MAAIF will build 19 bulk storage facilities (silos) with a capacity of 2,000 MT; make more food to available to humans and feed for livestock, poultry and fisheries; the ministry will procure and install 10 milling plants and 9 feed processing plants in strategic locations after carrying out the necessary feasibility studies; develop community based agro-processing capacity for self-employment and uplifting of local community through engaging farmer groups; private public partnership will be established with registered farmer groups and private farmers to run this infrastructure; instil a culture of bulking for value addition and better marketing strategies to those selected farmer groups that will partner in this arrangement</li> </ul>
Project details	<ul style="list-style-type: none"> <li>Funder: UK Export Finance, The joint ventures will seek 85% total financing of the project from the <u>UK Export Finance (UKEF)</u> via an export credit facility being offered by the UK government. 15% will be government of Uganda contribution.</li> <li>Partners/intermediaries: M/S Alvan Blanch Development Company and Colas Limited</li> <li>Amount: Unknown.</li> <li>Start date: May 2019</li> </ul> 
Relevance to NDP, STI	<ul style="list-style-type: none"> <li>One of the priorities under the Agriculture Sector Strategic Plan (ASSP 2015/16 to 2019/20) is to improve access to agricultural markets and value addition for the 12 priority commodities (maize, beans, rice, tea, coffee, bananas, dairy, fish, livestock, meat, fish and vegetables) and 4 strategic commodities (oil palm, oil seeds, cocoa and cotton). Under the grains value chains, the government acknowledges that there is need to increase grain processing capacity while improving post-harvest handling and management to match the crop production levels in the country. This will also increase farmers access to regional and international markets.</li> </ul>
Impact	<ul style="list-style-type: none"> <li>This will supplement other already initiated partnerships created by government to <b>enable Uganda's private sector to increase investment in processing and value addition</b>. For example, in financial year (FY) 2019 to 2020, the ministry has through NAADS committed UGX 55 billion to set up grain, fruit and feeds processing plants in the districts of Yumbe, Kapeeka, Nwoya and Kayunga. This partnership also includes Uganda Prisons, Uganda Development Corporation and the Ministry of Trade, Industry and Cooperatives</li> </ul>

<sup>24</sup> Slide Source: UK Investment in Research, Science, Technology and Innovation in Uganda: Preliminary Findings of Phase 1 Mapping, presentation by C. Grace and K. Attawell for the 16 January 2020 HLF. Dated 9 January 2020.

AgDevCo's investments are well aligned with Vision 2040, NDP II, and the STI SDP III:

- Uzima Chicken: Smallholder farmers linked to market, with increases in incomes; increased poultry meat and egg consumption in the local communities will also improve current low-protein diets and fight malnutrition.
- Nakifuma Farming Company: Establishing a new 390-sow pig breeding and finishing unit on the outskirts of Kampala; using improved genetics and animal husbandry practices to deliver quality meat; smallholder farmers linked to market, with increases in incomes.
- ESCO Uganda Ltd: Enabling ESCO to increase value chain efficiencies with minimal impact on its high technical standards; jobs created; smallholder cocoa farmers linked to market, with increases in productivity.
- Great Lakes Coffee: Smallholder farmers linked to market, with income increases; 22% female smallholders linked to market.
- Gulu Agricultural Development Company: Developing a modular training programme for conventional and organic cotton, sesame and chilies, spanning activities from land preparation to post-harvest handling, with an emphasis on organic farming. The project aims to increase crop yields and quality, link over 30,000 smallholder farmers to reliable markets, and improve access to finance.

The remaining investments captured in this section (see comprehensive listing in Annex I) include a solar power park, fast food franchising, financial services, and oil and gas (Tullow Oil's Uganda expenditure of \$130 million, which has been revised down from \$180 million, funded through the Uganda farm-down<sup>25</sup>). Data are not available to determine the support to beneficiation arising from Tullow Oil's participation in the oil and gas sector, although there is likely to be job creation, STI skills transfer, and benefits to the economy which will support national strategic objectives.<sup>26</sup>

The only other deal worth mentioning is UK-based TLG Capital Investments' venture capital financing of Quality Chemical Industries (aka Cipla) in 2009 and again in 2011.<sup>27</sup> These investments, which were picked up via the MarketLine database, are outside the timeframe scope of this mapping exercise but are worth noting due to the significance of the production facility. Quality Chemical is one of the few World Health Organization-approved pharmaceutical production facilities in sub-Saharan Africa, and has advantages provided by the flexibilities allowed to low-income countries by the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), which allow it to supply patent-protected medicines of global health significance. Quality Chemicals is a major supplier to the Global Fund's Pooled Procurement Mechanism, as well as to the Ugandan Government.

<sup>25</sup> If a licensed exploration company strikes oil or gas, it may sell a share in its rights over the discovery to other companies. This is called a 'farm-down', and is a common practice among small exploration companies, as it enables them to share with others the investment costs and technological challenge of getting the oil out of the ground and on to world markets.

<sup>26</sup> There are current questions around the viability of Tullow Oil, given its 70% drop in share price valuation in early December, based on inflating Guyana field findings. The CEO and head of production were fired by management and the company may not be able to service its debt with its depleted free cash flow. Management announced that they would be open to a sale.

<sup>27</sup> A Cipla brochure funded by UKAid states that TLG Capital Investment funding to Quality Chemicals originated in Mauritius; however, according to our sources TLG Capital Investments is headquartered in the UK. It should be noted that India-based Cipla deserves most of the credit for the FDI, technology transfer, and development of this facility; however, venture capital certainly played a role as well.



### 3 Investment alignment with Uganda's priorities

#### 3.1 Uganda's STI policy and planning frameworks

The Uganda NDP II 2015/16–2019/20 sets four key objectives: (i) increasing sustainable production, productivity, and value addition in key growth opportunities; (ii) increasing the stock and quality of strategic infrastructure to accelerate the country's competitiveness; (iii) enhancing human capital development; and (iv) strengthening mechanisms for quality, effective, and efficient service delivery. Development strategies to be pursued to achieve these include: (i) ensuring macro-economic stability with fiscal expansion for frontloading infrastructure investments; (ii) industrialisation and export-oriented growth through value addition, agro-processing, mineral beneficiation, and selected heavy and light manufacturing; (iii) an employment creation strategy through fast-tracking skills development and harnessing the demographic dividend; (iv) strong public–private partnerships for sustainable development; (v) a private sector-led growth and a quasi-market approach; and (vi) strengthening governance mechanisms and structures.

NDP II recognises that STI has a strategic role to play in accelerating economic growth, that global competitiveness is dependent on technological capability and on firms' abilities to access, apply, adopt, adapt and deploy technological knowledge to gain competitive advantage. Although the first Ugandan STI Policy was created in 2009, the STI ministerial sector was created in 2016, with the establishment of MoSTI and its four core public agencies: the Uganda National Council for Science and Technology, which previously was the lead agency on STI in Uganda; Uganda Industrial Research Institute (UIRI); Kiira Motors Corporation; and the Banana Industrial Research and Development Centre.

The new, draft STI SDP covers the period 2019/20 to 2024/25, and is nested within and guided by national, regional, and global policy frameworks, such as the aforementioned National Science, Technology and Innovation Policy 2009, NDP II, Uganda's Vision 2040, the National Resistance Movement Manifesto, the East African Community Treaty, the African Union Constitutive Act, the Science, Technology and Innovation Strategy for Africa, and the SDGs.<sup>28</sup> The STI SDP recognises successes since the start of NDP I – for example, the establishment of MoSTI to coordinate and guide the sector, improvements in the institutional environment for IP,<sup>29</sup> operationalisation of grant mechanisms to support R&D for STI – but also recognises continuing challenges, and notes that NDP II STI objective indicators, including Global Innovation Index scores, R&D funding, and STI human capital indicators, show a regression since 2010.

As an overarching theme, the new STI SDP foresees a two-level focus of innovation in science and technology: i) a *high technology track* focusing on improving the knowledge economy in major industrial sectors, such as engineering and manufacturing, petrochemicals, pharmaceuticals/health sciences, and large-scale agro-processing, along with emerging areas, such as nanotechnology and climate science that are at the leading edge of scientific and technological developments; and ii) an *appropriate technology track*, focused on technological upgrading in such areas as agricultural production and processing, woodworking and furniture making, mechanical repair, small-scale tool manufacturing, building material manufacturing, and capturing more value from minerals by processing them locally before exporting them.

The STI sector strategy in NDP II comprises four overall objectives, within which seven strategic objectives of the new STI SDP are anchored (Table 5), with each of the seven SDP objectives having sub-thematic areas and specific activities.

<sup>28</sup> The key SDGs that are of most direct relevance to the STI sector are SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation) and SDG 17 (Strengthen the means of implementation and revitalise the global partnership for sustainable development). Also, SDG 7 obligates member states to ensure access to affordable, reliable, sustainable, and modern energy for all. Under Target 7.1, members are expected to ensure universal access to affordable, reliable and modern energy services.

<sup>29</sup> Although the plan notes that IP-supportive investments to date have not had the anticipated impact in terms of patent applications and registrations, which may suggest that the approach needs to be refocused.

**Table 5: STI specific objectives in the NDP II as well as STI SDP III**

NDP II overall STI objectives	Strategic objectives from STI SDP III
Enhance integration of STI with national development process	Improve sector policies, planning, and coordination
	Develop STI support infrastructure
	Increase funding for STI from both public and private sectors
	Improve STI advancement, outreach, and human capital development
Increase transfer and adoption of technology	Increase transfer and adoption of technologies to support industrialisation for economic growth and development
Enhance R&D in Uganda	Strengthen R&D capacities and applications in existing and emerging fields of science and technology
Improve STI legal and regulatory environment	Improve the legal-regulatory framework for STI

With regard to Uganda’s STI plans specific to climate change, the NDP II states: ‘To achieve the Uganda Vision 2040, there is need for clear long-term policies and strategies for adapting to the impacts of climate change while following a low carbon development path through adaptation and mitigation policies and practices.’ This is to be achieved through: i) strengthening the country’s resilience, including increasing food security, reducing poverty, increasing levels of education, promoting skills development, and enhancing the integrity of ecosystems; and ii) adopting mitigation policies and practices that have adaptation co-benefits, such as expanding renewable energy programmes, promoting energy efficiency, and promoting green growth and a green economy. NDP II concludes: ‘Pursuing a low carbon development path has many benefits particularly given the links between climate change action, job creation, poverty reduction and economic competitiveness.’

The draft STI SDP asserts that STI activities will play an important role in preserving Uganda’s natural environment and adapting to climate change, to be achieved through: prioritising environmentally sound project applications for ‘green technologies’ to the National Research and Innovation programme (Activity 3.2.2); research into renewable energy sources (such as biomass), remote sensing and automation for agricultural production applications, waste management, and recycling; investing in simple environmentally sound technologies with already proven effectiveness through the technology transfer centres (Activity 2.1.3); and, as part of an outreach strategy, the planned science centres and museums included in Activity 2.1.5, which will play a key role in increasing public awareness of scientific approaches and technological solutions and adaptations that can mitigate climate change and reduce environmental degradation.

An overview of the degree of alignment between UK investments and Uganda’s NDP II, STI SDP, and climate change plans and priorities is provided below.

### 3.2 Alignment of existing UK investments

**Climate change:** UK public and private investment in climate change projects – which focus on areas including climate change resilience and mitigation, renewable energy, sustainable infrastructure, sustainable natural resource use (e.g. forestry) and waste management (see Figure 4 and Annex E) – is well aligned with Ugandan priorities. Table 6 below shows the extent of alignment using a traffic light scoring system<sup>30</sup>.

<sup>30</sup> A green, amber, or red score was assigned to indicate degree of alignment, with green indicating relatively higher alignment, red indicating relatively low alignment, and amber in between. Alignment scoring has been judged qualitatively by the team, based on volume of work related to the area in question, and the nature of the work related to the area – that is, the degree to which the work appears to support the national or sector objective in question.

**Table 6: Alignment of UK investment with Uganda’s climate change priorities**

Vision 2040 and NDP II	Alignment
Strengthen the country’s resilience, including increasing food security, reducing poverty, increasing levels of education, promoting skills development, and enhancing the integrity of ecosystems.	
Adopt mitigation policies and practices that: have adaptation co-benefits; expand renewable energy programmes; and promote energy efficiency, green growth, a green economy, and STI infrastructure and systems.	
STI SDP 2019/2020–2024/2025	Alignment
Prioritising environmentally sound project applications for ‘green technologies’ to the National Research and Innovation programme (Activity 3.2.2).	
Research areas, such as renewable energy sources (such as biomass), remote sensing and automation for agricultural production applications, waste management, and recycling.	
Environmentally sound technologies with already proven effectiveness will be promoted widely through technology transfer centres (Activity 2.1.3).	n/a
As part of its outreach strategy, the planned science centres and museums included in Activity 2.1.5 can play a key role in increasing public awareness of scientific approaches and technological solutions and adaptations that can mitigate climate change and reduce environmental degradation.	n/a

**Enterprise:** UK private sector investment in enterprise includes agriculture post-harvest processing and value addition, support to consumer goods (haircare, and food and beverages), and the services sector (tourism, transport, industrial services). It also includes investments that support the enabling environment for enterprise development (natural resource extraction, energy generation, financial services, insurance, telecoms infrastructure, business parks, airport, support to SMEs, linking small farmers with markets). While it is true that FDI into primary sectors can be expected to generate transitory rather than sustainable jobs, these investments are important for building the base for more sustainable employment and industry growth in other sectors, and certainly they show that the UK is contributing to alleviating the ‘binding constraints’ identified in the NDP, including poor and inadequate infrastructure, erratic energy supply, and high energy tariffs. UK public sector investment is aligned with Ugandan objectives relating to energy production and access, improving the enabling environment for enterprise development and strengthening the resilience and value add of the agriculture sector, but less so with the growth opportunities identified in NDP II. Table 7 below shows the extent of alignment using a traffic light scoring system.

**Table 7: Alignment of UK investment with Uganda’s (enterprise-relevant) growth opportunities**

NDP II growth opportunities	Alignment
Agriculture	
Tourism	
Minerals, oil and gas	
Infrastructure	
Human capital development	

**Health:** UK public sector investment is reasonably well aligned with some of the priorities identified in NDP II – in particular, projects focusing on specific disease areas. There is research ongoing in HIV, TB, malaria, NCDs, neglected tropical diseases, mental health, clinical services, and quality of care. Research is primarily focused on improving disease management through clinical and observational studies of new technologies and approaches to care, although there is also some basic research as well. Few projects address the potential for STI to strengthen other priority areas, such as health financing and health service delivery, or focus on research into health determinants. There is also little focus on medical technologies,<sup>31</sup> identified as a future priority by MoSTI. Table 8 below shows the extent of alignment using a traffic light scoring system.

<sup>31</sup> There are ongoing clinical trials to evaluate medical technologies in a wide range of disease areas. We assume that MoSTI is focused on late-stage R&D, incremental innovation, and commercialisation of innovative or adapted medical technologies; there is little work in this area.

**Table 8: Alignment of UK STI investment with Uganda’s health priorities**

NDP II health priorities	Alignment
To contribute to healthy human capital through equitable, safe, and sustainable health services (primary healthcare, human resources for health, community empowerment, maternal, newborn and child health, integrated disease surveillance and response, malaria prevention, HIV/Aids, TB, neglected tropical diseases, immunisation, NCDs, oral health, quality of care and patient safety, nutrition, health infrastructure, clinical services)	Green
To increase financial risk protection of households against impoverishment due to health expenditures (funding, national health insurance system, co-payment system, purchasing and payment mechanisms)	Red
To address key determinants of health through strengthening inter-sectoral collaboration and partnerships	Red
To enhance health sector competitiveness in the region, including the establishment of centres of excellence in heart, cancer, renal care, and diagnostic services	Red
MoSTI health priorities <sup>32</sup>	Red
Health: neonatal mortality; arthritis; NCDs; anti-microbial resistance; medicinal technologies; medicinal use of cannabis	Yellow
Indigenous medicine: medicinal herbs; analytical labs; nuclear magnetic resonance	Red

**Table 9: Alignment of UK investment with Uganda’s STI sector strategic objectives**

NDP II STI sector strategic objectives	Alignment
To enhance the integration of STI in the national development process	Yellow
To increase the transfer and adaptation of technologies	Yellow
To enhance R&D in Uganda	Green
To improve the STI legal and regulatory framework	Red
MoSTI strategic gaps and objectives	Alignment
STI infrastructure and system	Yellow
Funding basic and applied research	Yellow
Human capital for STI	Yellow
Private sector engagement in STI	Yellow
STI ecosystem	Yellow
STI legal and regulatory framework	Red

**STI sector strategic objectives:** While some UK investment through specific projects may be contributing indirectly to the achievement of some NDP II STI sector strategic objectives, it is less clear that investment is aligned with these objectives, or with the strategic gaps and objectives identified by MoSTI. This reflects the fact that sector strategic objectives are focused on the enabling environment for STI, for which the Government of Uganda is mainly responsible.

### 3.3 Recommendations to increase alignment

Overall, it appears that UK investment is well aligned with Uganda’s climate change priorities, but there is scope for greater alignment of investment with Uganda’s priority sectors for growth and economic development in health and enterprise. A more strategic approach to funding STI and sector projects could ensure closer alignment between investment and priority areas identified by the Government of Uganda, as well as a more balanced and coherent portfolio of investment that will maximise impact across these priority areas. Table 10 highlights possible opportunities for UK investment aligned with Uganda’s STI objectives. These are elaborated further below.

<sup>32</sup> HLF presentation July 2019.

**Table 10: Opportunities for UK investment**

NDP II overall STI objectives	Strategic objectives in STI SDP	Opportunities for UK investment and support
Enhance integration of STI in national development process	Improve sector policies, planning, and coordination	Enhance STI sector-wide planning and coordination in support of the new STI SDP
	Develop STI support infrastructure	Support STI incubation centres for start-ups, and STI parks, to facilitate commercialisation
	Increase funding for STI from both public and private sectors	Support research in areas such as renewable energy, biomass, remote sensing and automation for agricultural production applications, waste management, and recycling
	Improve STI advancement, outreach, and human capital development	Support skills development in STI
Increase transfer and adoption of technology	Increase transfer and adoption of technologies to support industrialisation for economic growth and development	Support selected sectors as highlighted under the high technology track <sup>33</sup> or the appropriate technology track <sup>34</sup>
Enhance R&D in Uganda	Strengthen R&D capacities and applications in existing and emerging fields of science and technology	Support R&D capacity development in emerging areas, including space science, marine science, climate science, nanotechnology, and mineral beneficiation
Improve STI legal and regulatory environment	Improve the legal-regulatory framework for STI	Build the capacity of selected institutions to manage IP, register patents, and interpret and negotiate IP terms in partner agreements

**Support to better planning and a sector-wide approach.** The budget for the STI SDP 2019/20–2024/25 is approximately Ugandan shillings (UGX) 4,022 billion (\$1 million), with an estimated funding gap of 77%. The budget reflects the Government of Uganda’s commitment under Vision 2040 and NDP II to allocate at least 2% of GDP to STI but – with the SDP’s annual budgets ranging from UGX 400 billion to 900 billion towards the end of the period – it is a steep increase from previous budgets. For example, the 2018/19 annual STI sector budget was UGX 189 billion, of which only UGX 35 billion (19%) was released. This, together with late release of funds and delayed procurements, affected the performance of the sector in 2018/19, including investments that required matching government funding (e.g. matching Chinese funding for the Machining and Skilling Centre at UIRI).<sup>35</sup> Underfunding limits the ability to provide catalytic and critical support mechanisms that would encourage private investment and enable the public sector to play its role in fulfilling the ambition in Vision 2040 for the ‘establishment of a National Science, Technology and Innovation System’.<sup>36</sup>

There is an STI Working Group, which brings together government ministries, academia, the private sector, development partners, and civil society with the aim of coordinating activities and ensuing a sector-wide approach to planning and budgeting. The sector is seeking cooperation and partnerships with bilateral and multilateral development partners in financing at least UGX 621.8 billion (20%) of the funding gap over the next SDP; this is one potential opportunity for UK contribution.

**Support to R&D grants mechanisms, incubation hubs, and STI parks.** Spending on R&D is on the rise in many African countries, with innovation hubs (e.g. in Cameroon, Kenya, and Rwanda) driven by greater investment from both the public and private sectors. In Kenya, the Nairobi Industrial and Technology Park is being developed within a joint venture with a public university, and the first technology incubators have been successful in helping start-ups capture markets in information technology (IT) in particular.<sup>37</sup> In Rwanda, a

<sup>33</sup> Improving the knowledge economy in major industrial sectors, such as in engineering and manufacturing, petrochemicals, pharmaceuticals/health sciences, and large-scale agro-processing, along with such emerging areas as nanotechnology and climate science that are at the leading edge of scientific and technological developments.

<sup>34</sup> Focused on technological upgrading in such areas as agricultural production and processing, woodworking and furniture making, mechanical repair, small-scale tool manufacturing, building material manufacturing, and minerals beneficiation.

<sup>35</sup> Ministry of Finance, Planning and Economic Development (2019) ‘Science Technology and Innovation Sector Semi-Annual Budget Monitoring Report’.

<sup>36</sup> STI SDP 2019/20 – 2024/25.

<sup>37</sup> United Nations Educational, Scientific and Cultural Organization (UNESCO) World Science Report 2015.

fund has been established to foster a green economy, which provides competitive funds to successful public and private applicants.

In Uganda, grants mechanisms which began under NDP I<sup>38</sup> have been credited with fuelling a 1,200% growth in the number of scientific publications from the country between 1990 and 2010<sup>39</sup>. However, according to the situation analysis in the STI SDP, and according to the view of stakeholders interviewed during the November 2019 visit, this increase in research outputs has not been translated into market-applicable innovation that can be monetised and can contribute to economic growth. Under the new STI SDP, more attention will be given to this, with R&D prioritised in key areas of production, including agriculture, health, oil and gas, minerals, and industry.

Incubation hubs to support early-stage commercialisation do exist in Uganda, but are heavily over-subscribed. The two main government-aided models for incubation of technology-intensive start-up enterprises are: i) the UIRI incubator, which provides technical skills-building and access to shared-use equipment (in fruits and vegetable processing; meat and fish processing; machine tooling; paper products; woodworking etc); and ii) the Food Technology Business Incubation Centre at Makerere University, which provides training and equipment mainly (but not exclusively) for students in the Makerere Food Technology programme seeking to establish food processing enterprises. There is considerable pent-up demand: over the last five years, the UIRI incubator received 760 requests but could accept only 50 (7%). Demand vs. capacity ratios were reported to be similar at the Makerere University Business School Entrepreneurship, Innovation and Incubation Centre<sup>40</sup>. The absence of science and technology parks exacerbates the constraints of STI incubators, since successful start-ups that would usually graduate to such parks tend to remain at the STI incubators for longer. The new STI SDP prioritises investment in science parks.

**Supporting research, commercialisation, and skills development in priority sectors.** There is scope for UK-financed STI projects to take a more proactive approach in areas such as skills development, technology transfer and adaptation, and industry development at the sector level, supporting Uganda's focus on both high technology and appropriate technology. During the November 2019 visit, Ugandan stakeholders highlighted priorities where UK investment until very recently has been notably absent, including: support for applied research that results in new products, tools, and processes, for translating research into new business enterprises, and for increasing value add (e.g. post-harvest food processing);<sup>41</sup> support for appropriate technology (e.g. to monitor air and water pollution), and for waste management, recycling plastic waste, sewage treatment, forestry and wetlands management, restoration of bare hilly areas, and water catchment areas;<sup>42</sup> and capacity and skills-building for research, innovation, and manufacturing, including science, technology, engineering and mathematics capacity building, strengthening research and innovation capacity in universities, and improved human capital planning aligned with labour market needs.

With regard to industry development at the sector level, lessons from countries in the East African region – for example, Kenya and Rwanda – may offer more relevant, recent lessons than India and South Korea (which are cited in the draft STI SDP). Particularly relevant is Rwanda's explicit strategy to identify enterprise-based solutions to poverty, and to increase exports in line with sustainable comparative advantages, resulting in significant increases in wages in key sectors. The UK could support MoSTI to more explicitly recognise private sector and research developments that could be built on: expanding productive capabilities through clustering skills, investments, and networks; strengthening backward and forward linkages in value chains; and diversifying into products that use similar productive knowledge in already strong sectors.

**Improving yield from IP capacity-building efforts.** The draft STI SDP recognises improvements in the institutional environment for IP as one of the major successes since NDP I. However, it is also noted that the IP supportive investments to date have not yielded anticipated impact in terms of patent applications and

<sup>38</sup> The Millennium Science Initiative (2007–2013), the National Science and Technology Innovation Programme (2014–2018), the Presidential Initiative for Science and Technology (2010–20202) at Makerere University, and the National Research and Innovation programme (2017–ongoing)

<sup>39</sup> [https://au.int/sites/default/files/newsevents/workingdocuments/33178-wd-stisa-english\\_-\\_final.pdf](https://au.int/sites/default/files/newsevents/workingdocuments/33178-wd-stisa-english_-_final.pdf)

<sup>40</sup> Visited during the November 2019 mission, this hub was heavily oriented towards ICT start-ups.

<sup>41</sup> Note that the Colas/Alvan Blanche initiative, with UKEF funding, is a very recent development, so the stakeholders interviewed may not yet be aware of it

<sup>42</sup> Although this mapping identified UK-supported work on plastics recycling and biomass use, the Ministry of Water and Environment was not aware of a single UK-supported project in the past 10 years.

registrations. This may suggest that the approach needs to be refocused and, appropriately, the UK is currently exploring how to share knowledge and best practice from the UK on patenting and capacity enhancements.<sup>43</sup> There was a strong message from interviewees during the November visit that further capacity development is needed in the area of IP, not only patent registration know-how, but also in interpreting and negotiating IP terms in agreements with external partners, who are perceived as being more IP-savvy. The language used in the STI SDP around IP capacity building implies a broad capacity-building approach is being planned: we recommend a more targeted focus on key institutions that are known to work extensively with external partners on potentially patentable innovations.

### 3.4 Recommendations for future mapping exercises

**Broaden the sector focus to capture STI-enabling private sector investment.** Overall, the focus on health, enterprise, and climate change projects was appropriate for the public sector and Wellcome Trust investments, as long as a broad definition was applied for climate change and enterprise. We included environmental projects within climate change projects and agricultural research projects within enterprise, and we searched using a range of sector codes – including agriculture, business, communications, education, environment, and multi-sector – to ensure all relevant projects were identified. For the private sector investments, limiting the focus to the three priority would have missed UK investments which are important not only in magnitude but also in supporting STI contributions to national development objectives.

Ensure the level of effort in mapping UK investments is commensurate with the value it provides to inform decision-making on future investments. The ease of obtaining data, and their quality and relevance, should be factored into the level of mapping effort. For example, it is difficult to quantify multi-country investments, and impossible to obtain investment value for most private sector investments. Project budget size does not tell us much about the utility or relevance of the project – some of the smaller projects identified appear to be among the most innovative and relevant to Uganda's priorities. Understanding the qualitative nature of investments – their relationship to STI and to development priorities – in order to make future investment more effective would be of more value. The focus should be on the most significant public sector funders and the most transparent and complete publicly available data sources. Although helpful to have as context, private sector funding data are not easily available via public sources, and, other than UK CDC investments, they are not likely to be influenced by the HLF process.

**Allow enough time for joint working on assessment of alignment.** Although the mapping Phase 1 terms of reference (TOR) did not require joint analysis with MoSTI, and did not allow sufficient time for this, it would have been helpful, especially with regard to evaluating the degree of UK investment alignment with Ugandan priorities.

**Analyse data according to standard sector codes to increase the efficiency of mapping.** Applying non-standard coding criteria (e.g. enterprise, climate change) requires more time for searches and analysis. The use of standard sector codes would reduce the time required, increase consistency, and support the credibility and replicability of mapping. Similarly, stakeholder agreement on criteria for STI relevance would ensure a consistent approach, and that important investments are not missed.

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<sup>43</sup> British High Commission presentation at the HLF in July 2019.

## Annex A Data collection and analysis: Method and limitations

### Method

As two of the priority sectors – climate change and enterprise – are not sector codes used in UK publicly available data sources, or in private sector market intelligence databases, the scope of projects to be included in the mapping for these was identified as follows:

- **Climate change:** Climate change resilience, food security and agriculture, ecosystems, renewable energy, green growth, waste management, and environment ... that involves STI.
- **Enterprise:** Supporting the development of products and services (e.g. food and agriculture, consumer goods and services, fintech), investments promoting an enabling environment for industry, business, and the private sector (e.g. infrastructure, energy, communications) ... that involves STI.

Data were collected through a review of key documents, desk research, and database searches:

- **Uganda-related document review and desk research:** This included a review of Ugandan Government policy and strategy documents to identify sector priorities and priorities for STI, and of other documentation to provide background on the wider Ugandan context and research and innovation ecosystem. Key documents reviewed included: Uganda's Vision 2040; NDP II 2015/2016–2019/2020; the National Science, Technology and Innovation Policy 2009; the National Agricultural Policy 2013; the National Science, Technology and Innovation Plan II (2012/2013–2017/2018); and the draft STI SDP III (2019/20 – 2024/25); as well as documents related to Uganda's climate change commitments.
- **UK investment-related document review:** This included key UK Government policy and strategy documents, e.g. the UK's International Research and Innovation Strategy; and a review of the rapid analysis of UK investment in Uganda conducted by the UK Collaborative on Development Research (UKCDR).
- **Database searches for publicly available data on UK public investment and triangulation of data:**<sup>44</sup> This included the following:
  - A search of the UK Government's [Devtracker](#) using the following terms – Uganda, Africa, active and closed projects, health, climate change, enterprise – as well as by government department, to ensure all relevant projects were identified. Devtracker identifies 48 active projects in Uganda and 135 active regional projects, some of which include Uganda, and all of these were reviewed.
  - A search of UKRI's [GtR](#) using the following terms – Uganda, Africa, active and closed, health, climate change, enterprise, energy, environment, skills development. GtR identifies 323 projects in Uganda.<sup>45</sup> Again, all of these were reviewed.
  - Triangulation with [DFID Research and Evidence Division](#) projects that include Uganda.
  - Triangulation with [Statistics in Development \(SID\)](#) to identify any additional projects in the 'bilateral other' category<sup>46</sup> not captured in Devtracker or GtR. All projects identified in SID when the search term Uganda was used were reviewed and cross-checked.
  - A search of the DHSC's [National Institute for Health Research \(NIHR\)](#) website, including the Global Health Research project portfolio.
  - A search of the websites of other UK Government-funded STI organisations, e.g. UK Space Agency, UK Met Office.
- **Desk review and database searches for data on private sector investment:** This included searches of and triangulation of data from the following databases and information sources:

<sup>44</sup> Note that the original agreed methodology was to use publicly available data, e.g. in databases and websites, not to make data requests to government departments or organisations. Some additional information based on selective data requests initiated by DFID/EARH was collected and added to the mapping findings during the process of finalising this report.

<sup>45</sup> GtR is the main source of data on research projects funded by BEIS, the majority of which are not included in Devtracker.

<sup>46</sup> 'Earmarked bilateral through multilateral' and 'core multilateral' funding was not included in the mapping as it is not possible to accurately attribute a share of this funding to Uganda. However, a review of projects in SID in these two categories suggests that these do not involve STI.



- o A search of [MarketLine Advantage](#)<sup>47</sup>, filtering for Uganda (1,617 analysis reports available). This identified 257 companies, 905 news items, and 455 deals between 30 June 2003 and 21 November 2019. Licensing deals were excluded by filtering for financial deals only. This was further refined by choosing UK as ‘participant/acquirer’, to screen for those deals with only the UK as investor. We cross-checked the deals listed with other data sources and the application of STI and health, climate, and enterprise criteria.
- o A search of [FAME](#)<sup>48</sup> for UK companies with subsidiaries in Uganda.
- o A search of [Investext](#)<sup>49</sup>, filtering for Uganda, going back two years (the furthest one can go back) to identify Ugandan companies (not necessarily UK–Uganda) and to screen relevant articles using key search terms.
- o A search of [Proquest ABI/INFORM](#) investment news articles to triangulate news articles and screen using company names identified through other searches and key words – Uganda and climate, Uganda and pharmaceuticals, Uganda and ‘UK Export Finance’.
- o A search of [EIU ViewsWire](#)<sup>50</sup> to identify relevant articles.
- o A search of [UNCTAD](#) and [UNESCO](#) reports.
- o A search of the [CDC](#) website, filtering for Uganda investments.
- o A search of the [Wellcome Trust](#) website, filtering for Uganda investments.

Public sector and private sector investment data were analysed by investment magnitude (where available for the latter) and source, investment distribution, and investment alignment.

- Analysis of investment magnitude and source included for public sector included: total funding, of total public, total funding by investment source (for the public sector, by UK government department), and total number of projects per investment source. Private sector investments were categorised as: 1) UK companies with subsidiaries in Uganda; 2) deals, to include a) mergers and acquisitions and b) capital raisings where the target is a Ugandan firm and the acquirer or funding source is a UK firm; and 3) CDC investments. Wellcome Trust grants were included as a separate category.
- Analysis of investment distribution included: total projects and total investment by priority sector and sector, for public investment. For the private sector, analysis included number of projects by priority sector, and, where data were available, by type of investment.
- Analysis of investment alignment included: comparison of UK public investment in STI in the priority sectors with priorities identified in Uganda’s Vision 2040, NDP II, STI SDP III, and sector priorities identified by MoSTI<sup>51</sup>.

In response to an additional request for a ‘deeper dive’ into climate change investment, additional analysis was done and summary case study examples of climate change-related projects were developed (see Annex AE).

## Limitations

Challenges and limitations encountered during Phase 1 of the mapping included the following:

- **Formal data requests.** The team was informed that UK government departments were not able to respond to formal data requests, so it was not possible to obtain more detailed data or to seek clarifications related to publicly available data. This also meant that it was not possible to collect data on UK Government pipeline commitments.
- **Informal data sharing across UK Government.** It was not possible to obtain information on the approach to data requests used by UKCDR to map UK public investment in research in Uganda; a two-

<sup>47</sup> Contains company information (SWOT profiles, case studies), industry reports, and country profiles and statistics for 110 nations [www.marketline.com/](http://www.marketline.com/)

<sup>48</sup> Contains data for up to 10 years for 2.3 million listed, public and private companies in the UK and Republic of Ireland.

<sup>49</sup> Thomson Reuters Investext Plus. Full-text analysts’ reports, searchable by company or industry. <https://research.thomsonib.com/>

<sup>50</sup> The ViewsWire service highlights important economic, political, and market developments (including outline forecasts) in over 200 countries. Business Monitor International (1,000 country focus), [www.eiu.com/landing/viewswire-update](http://www.eiu.com/landing/viewswire-update)

<sup>51</sup> See presentation to the HLF in July 2019.

page summary report was provided but not the full report, which would have been useful to understand the basis for the summary and to triangulate publicly available data. DFID Uganda was not able to respond to a request to triangulate the team's data findings on DFID investments, to ensure that the mapping dataset was complete. CDC, UKRI, and Wellcome Trust were also not able to respond to specific clarification questions within the timeframe for Phase 1.

- **Judgement required in applying criteria for STI and priority sector codes.** As noted earlier, there is a degree of subjectivity in applying STI definitions to determine which investments to include in the mapping – and the SID sector codes, OECD DAC broad sector and sector purpose codes, and coding used by market intelligence databases do not include climate change or enterprise. Consequently, there is an element of subjectivity involved in the allocation of projects to climate change or enterprise 'sectors' – in some cases projects were relevant to both. We addressed this by: i) defining climate change and enterprise broadly; and ii) including any project which had STI potential or elements.
- **Budget share of multi-country projects.** A number of projects were identified where Uganda is one of several countries covered. In most cases information about the share of total project budget allocated to specific countries is not provided in publicly available data sources. Where the share of budget invested in Uganda is known or could reasonably confidently be estimated the team allocated a share of the budget to Uganda.
- **Data gaps.** Project descriptions in Devtracker and GtR include information about lead implementing institutions but do not consistently provide information about implementing partners or recipient organisations in Uganda. It is therefore difficult, based on publicly available data, to draw robust conclusions about the main Ugandan beneficiaries of UK investment in STI. There are also gaps in the data available from Ugandan Government ministries and research institutes, which would otherwise support triangulation.
- **Project timeframes.** Given the different start and end dates of projects, it is difficult to determine with complete accuracy total public sector investment during a defined timeframe – 2015–2019 in this case – based on publicly available data. To do this would require checking annual expenditure for the relevant years for each project with those responsible for project management. Although information on the year of initiation of private sector investments is available, information on the timeframe or end date is generally not available.
- **Gathering and analysing private sector data requires an adapted approach.** Private sector investments are heterogeneous in terms of their origin funder and type, the depth of data available on each investment, and the method and sources used to find the investments. It is not possible to obtain investment value for CDC-funded investments and for those originating from private UK companies, with a few exceptions (e.g. credit facility rather than equity investments). This is due to the proprietary nature of the investment and non-disclosure agreements. The implication is that it is not possible to attach value sums to private UK investments and to determine overall investment magnitude. Applying the 'enterprise' code to private sector investments is particularly challenging and 'climate' is not a standard code either, thus because 'enterprise' and 'climate' do not align to standard Industrial Classification codes, some subjectivity is inevitable in categorising sectors to a non-standard code or criteria. Some judgement is also required in determining whether an investment meets STI criteria, given the limited information available; interviews or more extensive research would be required to understand the degree of STI skills transfer and value addition allowed for in a particular deal, and ultimately to understand how well each investment is promoting industrialisation and structural change in the economy.
- **Alignment of Uganda mission visit with Phase I objectives and data needs.** The team leader requested meetings with the National Council for Science and Technology, which is reported to have centralised data on UK investments in STI and the Uganda Investment Authority, which should have centralised data on UK private sector investments. These entities failed to agree to meet. Although the STI sector is led by MoSTI, it is comprised of four core public agencies; of these, only UIRI was included in the visit schedule. It would also have been helpful to meet with the Uganda Bureau of Statistics, Business and Industry Statistics department; and the Ministry of Trade, Industry and Cooperatives,

which could have provided data useful for the mapping exercise, but these were not included in the scheduling.

- **Short timeframe for Phase I.** Consultant contracting was finalised the week before the Uganda visit and only three weeks were available for the collection of data from a wide range of public and market intel sources; fact-checking and additional data collection; the production of an Excel summary of investments; data analysis; graph and table production; and synthesis into a draft PowerPoint slide deck. The short timelines also meant that there was no opportunity to engage MoSTI in evaluating alignment between UK investment and Ugandan Government priorities.

## Annex B Final Inception Report, 2 December 2019

### 1. Introduction

The United Kingdom (UK) government has a long history of investing in Uganda. In July 2019, a UK-Uganda High Level Forum (HLF) was formed to provide strategic guidance on future and priority research, science, technology and innovation (STI) investments in Uganda that align with mutual interests, Ugandan national priorities<sup>52</sup> and global frameworks such as Agenda 2030.

Current information about the extent of UK government and private sector investment in STI in Uganda is limited and the HLF has commissioned OPML to conduct a mapping exercise to provide a more comprehensive overview. The mapping exercise is expected to determine the scope, related partnerships and impact of existing UK investments, to determine the scope of investment in STI in Uganda by other major countries and donors, and to identify gaps and opportunities for future UK investments and partnerships. These specific tasks will be addressed in two phases:

- **Phase 1** will focus on validating priority sector and STI definitions with key stakeholders, mapping UK public and private investments, relying on publicly available information for the public sector data and on market intelligence databases for the private sector information.
- **Phase 2** will focus on validating and building on the publicly available information on public sector investments through targeted data requests to UK government departments and partners, identifying partnerships and outputs resulting from UK investments, mapping investment in STI in Uganda by other major countries and donors, and identifying gaps and opportunities for future UK investment.

This short report summarises the approach that the OPML consultant team will take to conduct Phase 1 of the mapping and the work plan and timeframe for this Phase.

### 2. Approach and method

#### 2.1 Scope

In line with the Terms of Reference (TOR), the mapping in Phase 1 will focus on:

- Public sector investment, focusing on direct UK official development assistance (ODA) funding and government departments providing the most significant investment (Department for Business, Energy and Industrial Strategy [BEIS]; the Department for International Development [DFID]; and the Department for Health and Social Care [DHSC]), UK Research and Innovation, other government departments and agencies as appropriate, other organisations making significant investment in STI such as the Wellcome Trust, and direct private sector investment in STI in Uganda.
- Investment primarily during the 5-year period 2015-2019. However, given the different start and end dates of projects, investment starting prior to 2015 but continuing into 2015-2019 and investment starting during 2015-2019 and continuing after 2019 will be included (see 2.3 Data collection and analysis). Projects that ended before 2015 will not be included. The mapping will also consider pipeline commitment for 2020-2025 where relevant and information is available.
- Sectors relevant to Ugandan national priorities and the SDGs, but with a specific focus on three areas identified by the HLF (health, climate change, and enterprise).

Based on initial discussions with the client and preliminary review of sources of publicly available data, it is clear that there is no commonly agreed definition of what constitutes 'science', 'technology' or 'innovation'. We therefore propose to use the following definitions<sup>53</sup>:

- Science is the process of generating knowledge based on evidence. It implicitly includes both natural sciences (biology, chemistry, physics, mathematics and related disciplines) and social sciences (economics, sociology, anthropology, politics, law).

<sup>52</sup> Identified in documents including Vision 2040, National Development Plans II and III and the Science, Technology and Innovation Sector Development Plan (STI-SDP).

<sup>53</sup> Source: 2010 <https://www.gov.uk/dfid-research-outputs/science-and-innovation-for-development>

- Technology is the application of scientific knowledge, and frequently involves invention, i.e., the creation of a novel object, process or technique.
- Innovation is the process by which inventions are produced, which may involve the bringing together of new ideas and technology, or finding novel applications of existing technologies. Generally, innovation means developing new ways of doing things in a place or by people where they have not been used before. Modern innovation is usually stimulated by innovation systems and pathways.

We have also identified initial sectors and investment categories to be included in the scope of the mapping (see 2.3 Data collection and analysis). Publicly available data is categorised using sector codes. These include 'health' but not include 'climate change' or 'enterprise' and we have, therefore, also proposed sector codes for project include in data collection.

We will agree the definitions and the sectors and investment categories with key stakeholders during the initial visit to Uganda by the Team Leader, including discussion of example projects that might or might not be included, to ensure there is a shared understanding of the scope of the mapping.

## 2.2 Framework

Mapping data collection and analysis will be framed around three broad areas of inquiry:

- (1) Investment magnitude and source – What is the estimated amount of UK government and private investment in STI in Uganda?
- (2) Investment categorisation – Where does UK investment in STI go?
- (3) Investment alignment – To what extent is UK government investment in STI aligned with Ugandan national development priorities? To what extent is the HLF strategic focus on three areas – health, climate change and enterprise – appropriate?

## 2.3 Data collection and analysis

### *Data collection*

Methods proposed to collect data include review of key documents, desk research and database searches. As far as possible within the timeframe and according to data availability, this will be supplemented with data collected from interviews and direct approaches to UK and Ugandan government stakeholders.

- (1) Uganda-related document review and desk research – This will include: review of Ugandan government policy and strategy documents to identify sector priorities and priorities for STI; and review of other documentation to provide background on the wider Ugandan context and research and innovation ecosystem. Key documents to be reviewed include Uganda's Vision 2040, Second National Development Plan 2015/2016-2019/2020, National Agricultural Policy 2013, National Science, Technology and Innovation Plan 2012/2013-2017/2018, and documents related to Uganda's climate change commitments and to the development of the Third National Development Plan. The Uganda Joint Country Assistance Strategy, Uganda's Annual Public Investment Plans, and data provided by key stakeholders in Uganda are expected to be useful to sense-check the funding source data collected by the team on the UK's public research STI investment commitments to Uganda.
- (2) UK investment-related document review – This will include: review of key UK government policy and strategy documents to determine priorities and commitments, including, for example, the UK's International Research and Innovation Strategy; and review of the rapid analysis of UK investment conducted by UKCDR.
- (3) Meetings with Ugandan stakeholders in order to enhance research credibility – Phase 1 will include a visit to Uganda by the Team Leader in November 2019 to collect data and interview key stakeholders. Interviews and meetings will be held with informants who can advise on Uganda government policies and priorities, including relevant Ugandan government ministries, departments and agencies, and the Uganda British High Commission and DFID teams. As noted above, we see initial interviews and meetings with Ugandan national stakeholders as critical to establishing rapport with stakeholders, agreeing definitions and the scope of the mapping, understanding the rationale for Ugandan government priority sectors for STI, as well as collecting data used to sense-check the data we are collecting from funding source and identifying where the main STI

investment gaps are. There is a social construct to defining the concepts of “science technology and innovation”, and qualitative judgement required when applying inclusion/exclusion criteria to STI as well as the three priority sectors. In order to ensure that stakeholders are aligned in their definitions and their application of these definitions, a participatory workshop session will be held where stakeholders will have the opportunity to think about how to apply exclusion/inclusion criteria to specific project examples.

(4) Desk review and database searches for data on public investment – Our approach to collection of data on UK public investment in STI-related projects in Uganda, based on publicly available data sources, will be as follows:

- Search of the UK government’s Devtracker using the following terms – Uganda, Africa, active and closed projects – as well as by government department, to ensure we identify all relevant projects. Devtracker identifies 48 active projects in Uganda and 135 active regional projects, some of which include Uganda. As noted earlier, inclusion criteria will also include project timeframe – while mapping will focus primarily on investment during the 5-year period 2015-2019, projects starting prior to 2015 but continuing into 2015-2019 and projects starting during 2015-2019 and continuing after 2019 will be included – projects ending before 2015 will not be included. The overall timeframe is therefore likely to encompass 2014-2024.
- Search of UKRI’s Gateway to Research (GtR) using the following terms – Uganda, Africa, active and closed. GtR identifies 323 projects in Uganda; within these we will search for projects related to STI, health, climate change, enterprise, energy, environment, skills development. GtR is the main source of data on research projects funded by BEIS, the majority of which are not included in Devtracker. The same timeframe criteria as above will also be applied to projects in GtR.
- Triangulation with DFID RED projects that include Uganda.
- Triangulation with Statistics in Development (SID) to identify any additional projects in the ‘bilateral other’ category<sup>54</sup> not captured in Devtracker or GtR.
- Search of the DHSC’s National Institute for Health Research website, including the Global Health Research project portfolio.

Search of websites of other UK government funded STI organisations.

We will ensure common and aligned application of inclusion/exclusion criteria by working through analysis/categorisation of selected projects together as a team, as well as with stakeholders in country. The purpose of this is to increase the credibility and the stakeholder acceptance of the mapping findings.

(5) Desk review and database searchers for data on private sector investment – To collect data on private investment we will review the databases and information sources listed below, triangulating across sources and ensuring data saturation (the point where further data does not add anything new to data already collected). To define “investment” we have applied definitions from the Investopedia Dictionary:

An **investment** is an asset or item acquired with the goal of generating income or appreciation. **Foreign direct investment** (FDI) is an investment made by a firm or individual in one country into business interests located in another country. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets in a foreign company. Foreign direct investments can be made in a variety of ways, including the opening of a subsidiary or associate company in a foreign country, acquiring a controlling interest in an existing foreign company, or by means of a merger or joint venture with a foreign company. FDIs are distinguished from portfolio investments in which an investor purchases equities of foreign-based companies.

We will include FDI investments as well as capital raisings (equity and debt investments). Please see Annex 2 for a full list of investment sub-categories to be included in the analysis.

## Marketline

<sup>54</sup> ‘Earmarked bilateral through multilateral’ and ‘core multilateral’ not included in the mapping as it is not possible to accurately attribute a share of this funding to Uganda. However, preliminary review of projects in SID in these two categories suggests that these do not involve RSTI.

Browse by geography and choose Uganda

Click Uganda (1,617 analysis reports available), 257 companies in total, 905 news items, 455 deals in total. All between 30 June 2003 and 21 November 2019. Exclude licensing deals by filtering for financial deals only. Choose UK as the “participant/acquirer” role. Cross-check deals listed with other data sources (below) for validity, and application of STI and health, climate and enterprise criteria.

### **FAME**

Can sort for UK companies with subsidiaries in Uganda.

### **Investext**

Search criteria under region = Uganda, and going back two years (the furthest one can go back) this brings up everything to do with Ugandan companies, not necessarily UK/Uganda. Relevant articles to be screened using key word search function.

### **Proquest ABI/INFORM**

Investment news articles – will be used the same as Investext, to triangulate news articles and will search using key words of company names identified through other searches, and also key words: Uganda and climate, Uganda and pharmaceuticals, Uganda and “UK Export Finance” (UKEF).

### **EIU**

Will use the same search terms as above to bring up relevant articles.

UNCTAD reports and the Website of the Commonwealth Development Corporation (CDC)

(6) Data requests to UK stakeholders – In parallel, we will prepare targeted data requests for UK government departments and organisations, with a view to follow up early in Phase 2 to validate and build on publicly available data collected in Phase 1.

### *Data analysis*

Data collected will be analysed by:

(1) Investment magnitude and source – This will include: analysis of total funding, of total public and private investment, total funding by investment source (for the public sector, by UK government department, and for the private sector, total investment deals and value originating from UK firms), and total number of projects per investment source. Projects that are funded by the UK government will be categorised as: 1. Uganda-only projects; 2. multi-country projects that include Uganda where the share of budget invested in Uganda is known or can reasonably confidently be estimated (i.e. if a project covers less than 5 countries)<sup>55</sup>; and 3. multi-country projects that include Uganda where it is not feasible to estimate Uganda’s share of total investment. Total funding will be based on projects in categories 1 and 2. Private sector investments will be categorized as 1. UK companies with subsidiaries in Uganda and 2. Deals to include a) mergers and acquisitions and b) capital raisings where the target is a Ugandan firm and the acquirer or funding source is a UK firm.

(2) Investment categorisation –

For the public sector, investments will be categorised (and organised in the Excel spreadsheet, which is one the Phase 1 deliverables) as follows:

- **Project**
- **funding source** (e.g. uk government department and, where appropriate, funding mechanism e.g. gcrf or institution e.g. research council)
- **total budget**
- **share of budget** (where multi-country project)
- **priority sector** (i.e. health, climate change, enterprise)

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<sup>55</sup> For example, if a research project covers Uganda and Malawi, we would estimate that 33% of the total budget is invested in Uganda, with the other 66% shared between the UK lead organisation and Malawi.

- **sector** (using relevant devtracker codes)<sup>56</sup>
- **implementing/recipient organisation** (e.g. university, research institution, private sector organisation)
- **timeframe** (start date and end date where this information is available)

For the private sector, investments with Ugandan private entities since 2015 will be analysed, as follows:

- **Investment value in aggregate and by sector** (over time since 2015)
- **Type of investment** e.g. M&A, asset transaction, private equity, venture financing, equity offering, debt offering subsidiary..

It is possible to analyse the above by the following business sectors: aerospace and defence, agriculture and forestry, automotive, consumer and business services, consumer goods, construction, financial services, government and non-profit organisations, manufacturing and heavy industry, mining, energy and utilities, pharmaceuticals and health care, telecoms and IT, transportation, travel, tourism and leisure.

It is also possible to analyse the number and value of deals in each sector to determine sectors of heightened activity and allow for comparison with the focus sectors of health and climate change. ‘Health’ is the most straightforward, as it fits with a pre-defined sector category. Allocating an investment to the ‘Climate’ category will require some digging into the specifics of the deals, which will require additional news search, as e.g. investment in mining, energy and utilities will not only include renewable solar and hydro initiatives but also copper and oil focused investments. Stakeholder discussions during the drafting of this inception report have provided further clarity around the definition of “enterprise” for purposes of this exercise, and again this will require some further digging from news articles in order to make a judgement on which investments align with this definition.

(3) Investment alignment – This will include: analysis of priorities identified in NDP II and NDP III<sup>57</sup> and sector priorities identified by the Ministry of Science, Technology and Innovation<sup>58</sup>; analysis of UK STI investment in priority sectors and analysis of investment gaps.

Key data related to (1) and (2) will be summarised in an Excel spreadsheet.

Table 1 below summarises data sources and data analysis categories mapped against the key areas of inquiry.

**Table 1: Data analysis categories and data sources mapped against key areas of inquiry**

Key areas of inquiry	Data analysis categories	Data sources
<p><b>Investment magnitude and source: What is the estimated amount of UK government and private investment in STI in Uganda?</b></p> <p><b>Investment categorisation: Where does UK</b></p>	<p><b>Public</b></p> <p>Project</p> <p>UK government department / institution funding source</p> <p>Total budget value</p> <p>Share of total budget (where multi-country)</p> <p>Start date and end date</p> <p>Priority sector</p> <p>Sector</p> <p>Implementing/ recipient organisation</p>	<p><b>Public</b></p> <p>Sources of data detailing investments from public sector sources include:</p> <p>Development tracker</p> <p>UK Gateway to Research UKRI database Statistics on International Development</p> <p>UK Space Agency</p> <p>UK Met Office</p> <p>NIHR</p>

<sup>56</sup> These include (relevant codes underlined): administration; agricultural; banking and financial services; budget; business; communications; disaster relief; education; environment; government and civil society; health; industry; multisector; other social infrastructure and services; refugees; trade; transport and storage; unallocated; water

<sup>57</sup> Including basic social services, employment creation, poverty eradication, improved livelihoods and overall national development and, in NDP III, promotion of inclusive development and sustainable economic progress and cross-cutting issues that include environment management, science and technology, resilience to environmental shocks and social protection.

<sup>58</sup> See presentation to the HLF July 2019.



<p><b>investment in STI go?</b></p>	<p><b>Private</b>                  Total annual investment value since 2015 (UK vs. other countries)                  Annual investment value to sectors (carving out UK specific investments for sectors of interest by triangulating with more qualitative news reports)                  Overall and by sector of interest:                  Type of investment</p>	<p><b>Private</b>                  The following databases will be used:                  1 MarketLine Advantage. Company information (SWOT profiles; case studies); industry reports and country profiles and statistics for 110 nations. Go to the Database section for find country and city statistics, financial deals tracker, company prospector, and investment and advisory prospector.                  2) Thomson Reuters Investext Plus. Full-text analysts' reports, searchable by company or industry.  <a href="https://research.thomsonib.com/">https://research.thomsonib.com/</a>                  3) EIU ViewsWire service highlights more than 250 important economic, political and market developments (including outline forecasts) in over 200 countries. (Available via ProQuest ABI/INFORM Complete Alumni edition). 5) Business Monitor International (1000 country focus)  <a href="http://www.eiu.com/landing/viewswire-update">http://www.eiu.com/landing/viewswire-update</a>                  4. FAME. Data for up to ten years for 2.3 million listed, public and private companies in the UK and Republic of Ireland.                  5. UNCTAD reports and CDC website</p>
<p><b>Investment alignment</b></p>	<p>How do the investment sectors compare to strategic plans in terms of:                  Magnitude/value of investment in priority sectors?                  Number of projects in priority sectors?                  Focus of projects in priority sectors? (e.g. recipient organization)</p>	<p>National STI Policy (2009), STI Sector Development Plan, National Development Plans, Vision 2040, Agenda 2030</p>

Issues to be validated and agreed with key stakeholders include:

- **Our definitions of public and private investment** – i.e. that investments captured through MarketLine, Investext, FAME and EIU will be our private sector dataset and those captured via Devtracker, Gateway and UKRI databases, as well as Statistics on International Development, will be our public sector dataset. We also recognise that there may some key sources of investment, such as Wellcome Trust, that do not fit into either of the above datasets but that are important to capture.
- **Our proposed approach to inclusion of investments** – i.e. that all projects with a STI focus that relate to health, climate change and enterprise will be included and that climate change and enterprise are broadly defined, so that we would include e.g. projects concerned with renewable energy, increasing rural access to energy, climate-related resilience, weather forecasting and early warning systems, drought-resistant crop development.
- **Aligning timescales** – The private sector investments will include those between 2015 and the present. Private sector investments will not have a timescale attached them but they will have a year of initiation.

### 3. Work plan

We have already started to consider issues related to definitions and criteria, and have conducted a preliminary review of data sources. During the first two weeks of November, we will further investigate and review sources of public and private data, as described above, how this data is structured, and how it can be used to answer the TOR questions. We will also review Uganda strategic plans to plan for the Uganda visit and inform the interview questions for key informants in Uganda. During the week of 11 November we will finalise the draft checklist for interviews during the initial visit to Uganda and the draft checklist for data requests in Uganda. The Team Leader will visit Uganda during the week of 18 November to meet with and

interview key stakeholders, address the issues identified above, and initiate data collection from the Ugandan perspective.

Subsequently, we will collect, synthesise and analyse quantitative data, which lends itself to populating an Excel spreadsheet, and qualitative data such as news reports and grant proposals, which will help to provide the context. We will focus on cross-checking data sources to ensure we have captured all relevant projects, remove any duplicates, and analysis and presentation of key findings from the data. Based on preliminary analysis of public sector investment data, we will finalise the data validation and request for key UK organisations for Phase 2.

The following provides a summary of the proposed work plan and timeframe.

	Nov-04	Nov-11	Nov-18	Nov-25	Dec-02	Dec-09	Dec-16	Dec-23	Dec-30	Jan-06
Call with UKCDR	K&C									
Document review	K&C									
Inception report submission Nov 8										
Preparation for Uganda visit		Cheri								
Sharing interview checklist as prep for Uganda visit Nov 13		Cheri								
Database/data source research	K&C	K&C								
Uganda visit			Cheri							
Data collection, synthesis and analysis			Kathy	K&C	K&C					
Powerpoint drafting					K&C					
Powerpoint headings submitted for agreement Dec 4										
DFID to provide feedback on ppt headings Dec 6										
Submission of draft ppt Dec 10										
HLF Dec 13										
Report drafting										
Draft report submitted Dec 23										
DFID to provide feedback on report by Jan 3										
Final report submitted Jan 10										
Phase 2 begins										

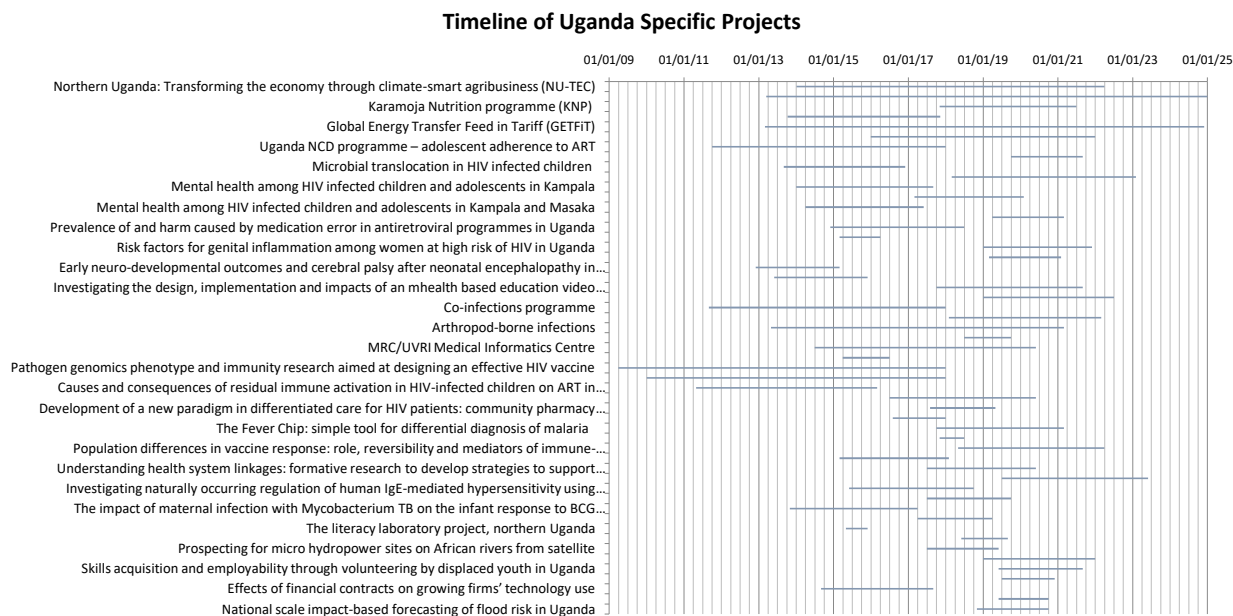
#### 4. Outputs

The main outputs from Phase 1 are:

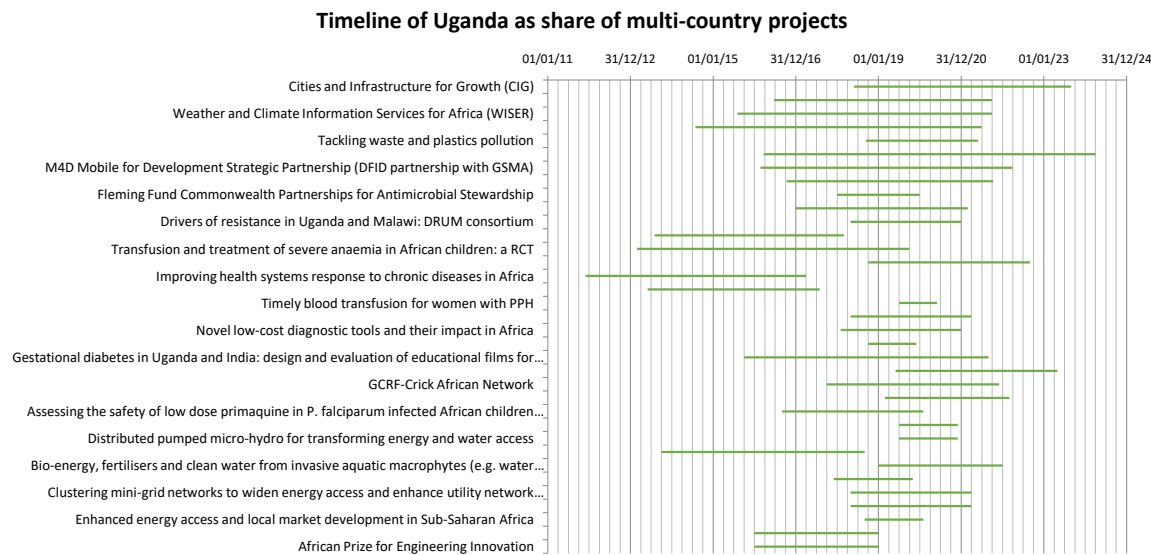
1. Inception report (maximum 10 pages).
2. Excel spreadsheet summarising findings on (1) investment magnitude and source and (2) investment categorisation, together with recommendations on method and frequency of updating.
3. Presentation of preliminary findings from Phase 1 to HLF on 11 December 2019 and slide deck.
4. Interim report presenting findings on UK public and private investment in STI in Uganda structured around the three key areas of inquiry (maximum 20 pages) including a 2 page executive summary.

## Annex C Public sector project timeframes

### Investment Timeline: Uganda specific projects



### Investment Timeline: Uganda as share of multi-country projects



**Annex D Public sector project summary table****D.1 Uganda-only projects**

Project	Funding source	BEIS funding source disaggregated	Total budget	Share of budget (if multi-country)	Start date	End date	Priority sector (health, climate change, enterprise)	Sector (sector code from Devtracker)	Type of research: (basic (B), social (S), applied (A))	Description; recipient/ implementing partner
Enhancing resilience in Karamoja	DFID		£20,000,000		10/10/13	9/11/17	Climate change	Health		STI share of total project budget of £53,783,776. Increasing the resilience of communities to climate extremes and weather events UN Food and Agriculture Organization, World Food Programme (WFP), UN Children's Fund (UNICEF), GIZ, and others
Global Energy Transfer Feed-in Tariff (GETFIT)	DFID/ BEIS		£51,000,000		15/33/13	31/12/24	Climate change	Business		DFID and BEIS 50:50 split Supports small-scale on-grid renewable energy projects through regulatory/systems tariffs; market support; contribute to reducing greenhouse emissions UN Development Programme, KfW, DAI, Fed. Min. Educ. and Res. Germany
Resource-efficient farming by renewable Ugandan irrigation technology (REFRUIT)	BEIS	Innovate UK	£199,970		6/19	10/20	Climate change	Agriculture		Appropriate, renewable irrigation technology Scene Connect Ltd
National-scale impact-based forecasting of flood risk in Uganda	BEIS	NERC	£287,556			11/18–10/20	Climate change	Agriculture		Improved forecasting of flood risk University of Reading

<b>Drought and Flood Mitigation Service (DFMS)</b>	BEIS (UK Space Agency International Partnership Programme funded through GCRF)		£4,800,000		2016	2022	Climate change	Agriculture		Aims to improve climate modelling and its impact on agriculture through the development of an Environment Early Warning Platform, focused on the Karamoja region RHEA Consortium (RHEA Group), Environment Systems, Pixalytics, Databasix, AA International, AgriTechTalk International, HR Wallingford, the Met Office, Mercy Corps, and Oxford OPM. In partnership with Uganda National Meteorological Authority, Kakira Sugar Company, NGO Green Dreams/iCOW
<b>Karamoja Nutrition programme (KNP)</b>	DFID		£2,600,000		3/11/17	30/6/21	Health	Agriculture		Innovative initiatives to prevent malnutrition, including crop bio-fortification. STI share of total project budget of £28,793,116 WFP, US Agency for International Development (USAID), UNICEF, GIZ
<b>Uganda NCD programme – adolescent adherence to ART</b>	BEIS	MRC	£566,333		10/11	1/18	Health	Health	A	MRC/UVRI
<b>Mathematical tools to inform sustainable interventions against schistosomiasis in Uganda</b>	BEIS	ESRC	£463,679		10/19	9/21	Health	Health	A	University of Surrey
<b>Microbial translocation in HIV-infected children</b>	BEIS	MRC	£205,906		9/13	12/16	Health	Health	B	University College London (UCL)
<b>Immunological basis of susceptibility to non-typhoid salmonella</b>	BEIS	MRC	£2,995,139		3/18	2/23	Health	Health	B	University of Oxford

<b>bacteraemia in HIV-infected adults in Uganda</b>										
<b>Mental health among HIV-infected children and adolescents in Kampala</b>	BEIS	MRC	£706,133		1/14	9/17	Health	Health	S	LSTM
<b>The dynamics of AMR genes in the pig and human gut microbiome in Uganda</b>	BEIS	BBSRC	£304,886		3/17	2/20	Health	Health	B	University of Edinburgh
<b>Mental health among HIV-infected children and adolescents in Kampala and Masaka</b>	BEIS	MRC	£630,488		4/14	6/17	Health	Health	S	MRC/UVRI
<b>Testing the OPERA framework to monitor the right to health in Uganda</b>	BEIS	MRC	£188,739		4/19	3/21	Health	Health	A	LSHTM
<b>Prevalence of and harm caused by medication error in antiretroviral programmes in Uganda</b>	BEIS	MRC	£211,108		12/14	7/18	Health	Health	A	University of Liverpool
<b>A development study to examine the</b>	BEIS (GCRF)	MRC	£136,895		3/15	4/16	Health	Health	S	University of Plymouth

feasibility and acceptability of pulmonary rehabilitation in adults with chronic respiratory disease										
Risk factors for genital inflammation among women at high risk of HIV in Uganda	BEIS	MRC	£772,975		1/19	12/21	Health	Health	S	LSHTM
Assessing the potential for transforming health in Uganda through an electronic health data sharing platform and data science	BEIS	MRC	£199,059		3/19	2/21	Health	Health	A	Makerere University
Early neuro-developmental outcomes and cerebral palsy after neonatal encephalopathy in Uganda: an assessment of the role of perinatal infection	BEIS	MRC	£30,789		12/12	3/15	Health	Health	B	MRC/UVRI
School-based treatment with ART to	BEIS	MRC	£1,537,873		6/13	12/15	Health	Education	A	LSHTM

reduce transmission										
Investigating the design, implementation, and impacts of an mhealth-based education video training programme for CHWs in Uganda	BEIS	ESRC	£0 (studentship)		10/17	9/21	Health	Health	A	University of Oxford
Operationalising KMC before stabilisation among LBW neonates in Africa: RCT to examine mortality impact in Uganda	BEIS	MRC	£1,945,781		1/19	7/22	Health	Health	A	LSHTM and Makerere University
Co-infections programme	BEIS	MRC	£2,398,525		9/11	1/18	Health	Health	S	Enhanced HIV prevention MRC/UVRI
Cancer epidemiology	BEIS	MRC	£690,153		2/18	3/22	Health	Health	B	LSHTM
Arthropod-borne infections	BEIS	MRC	£4,447,400		5/13	3/21	Health	Health	B	University of Glasgow
Preventing hospital readmissions for people with severe mental health	BEIS	MRC	£126,000		7/18	10/19	Health	Health	S	Swansea University and Ugandan NGO TBH



illness in East Africa										
MRC/UVRI Medical Informatics Centre	BEIS	MRC	£2,861,765		7/14	6/20	Health	Health	A	Increasing capacity to benefit from developments in genomics and medical informatics MRC/UVRI
Cluster randomised trial of the provision of alcohol hand gel	BEIS (GCRF)	MRC	£150,020		4/15	7/16	Health	Health	A	University of Liverpool
Pathogen genomics phenotype and immunity research aimed at designing an effective HIV vaccine	BEIS	MRC	£5,889,568		4/9	1/18	Health	Health	B	MRC/UVRI
Basic science project: Dissecting the immunological interplay between poverty-related diseases and helminth infection (IDEA)	BEIS	MRC	£2,328,754		1/10	1/18	Health	Health	B	MRC/UVRI
Causes and consequences of residual immune activation in HIV-infected children on ART in	BEIS	MRC	£681,897		5/11	3/16	Health	Health	B	UCL

resource-limited settings										
Can NET-ET reduce the risk of recurrent bacterial vaginosis in women at high risk of HIV infection?	BEIS (GCRF)	MRC	£804,091		7/16	6/20	Health	Health	B	LSHTM
Development of a new paradigm in differentiated care for HIV patients: community pharmacy during refill using the ARTAccess mobile phone application	BEIS	MRC	£190,540		8/17	5/19	Health	Health	S	University of Cambridge
Identifying approaches to improve HIV treatment outcomes among older Ugandans	BEIS (GCRF)	MRC	£180,563		8/16	1/18	Health	Health	A	LSHTM
The Fever Chip: a simple tool for differential diagnosis of malaria	BEIS	EPSRC	£0		10/17	3/21	Health	Health	B	University of Glasgow Studentship

<b>A spatial framework for optimising control at the local level: coordinated strategies for NTDs and malaria</b>	BEIS	MRC	£101,842		11/17	7/18	Health	Health	A	Lancaster University
<b>Population differences in vaccine response: role, reversibility and mediators of immune-modulation by chronic parasitic infections in the tropics</b>	BEIS	MRC	£2,319,188		5/18	4/22	Health	Health	B	LSHTM
<b>Sertraline for treatment of HIV-associated cryptococcal meningitis</b>	DHSC, DFID, Wellcome Trust, MRC (GCRF)	MRC	£888,671		3/15	2/18	Health	Health	B	Under Joint Global Health Trials scheme; multi-funder initiative. See also Wellcome Trust-funded projects. Makerere University
<b>Understanding health system linkages: formative research to develop strategies to support quality improvement in treatment in the private sector</b>	BEIS	MRC	£200,665		7/17	6/20	Health	Health	A	LSHTM

Invasive Group B streptococcus disease in young infants: understanding host and pathogen immunity to inform maternal GBP vaccination development	BEIS (UKRI)		£1,208,693		7/19	6/23	Health	Health	B	St George's University of London
Investigating naturally occurring regulation of human IgE-mediated hypersensitivity using hookwork schistosome co-infection	BEIS	MRC	£459,831		6/15	10/18	Health	Health	B	University of Cambridge
Pharmokinetics of azithromycin in severe malaria bacterial co-infection in African children	BEIS	MRC	£167,369		7/17	10/19	Health	Health	B	Imperial College
The impact of maternal infection with Mycobacterium TB on the infant response to BCG vaccination	BEIS	MRC	£1,006,738		11/13	4/17	Health	Health	B	LSHTM

Menstrual health interventions and school attendance in Uganda	BEIS	MRC	£203,350		4/17	4/19	Health	Education	S	LSTM
The literacy laboratory project, Northern Uganda	BEIS	ESRC	£1,009,396		5/15	12/15	-	Education		Innovation in education University of Michigan
Northern Uganda: Transforming the economy through climate-smart agribusiness (NU-TEC)	DFID		£5,000,000		3/1/14	31/3/22	Enterprise	Agriculture		STI share of total project budget of £44,848,032 Support to farmers to adopt new practices, products and market development AgDevCo, Mercy Corps, Palladium
Translating nematode-resistant banana lines from successful field trials to uptake in Uganda	BEIS	BBSRC	£66,566		6/18	9/19	Enterprise	Agriculture	A	University of Leeds
Prospecting for micro hydropower sites on African rivers from satellite	BEIS	Innovate UK	£246,144		7/17	6/19	Enterprise	Multi-sector		Fluvial Bounty C.I.C
Enhancing essential oil feed stocks and high-value products from menthol species for local	BEIS (GCRF)	BBSRC	£816,239		1/19	1/22	Enterprise	Agriculture		University of Cardiff and Makerere University

<b>Ugandan economies</b>										
<b>Skills acquisition and employability through volunteering by displaced youth in Uganda</b>	BEIS (GCRF)	ESRC	£787,234		6/19	9/21	Enterprise	Education		Northumbria University
<b>Financial contracts, small firm growth, and job creation: experimental evidence from Uganda</b>	BEIS	ESRC	£100,372		7/19	12/20	Enterprise	Business		University of Stockholm
<b>Effects of financial contracts on growing firms' technology use</b>	BEIS	ESRC	£427,251		9/14	9/17	Enterprise	Business		University of Stockholm
<b>Uganda Chevening Scholarships</b>	Foreign and Common wealth Office		£493,786		1/4/18		-	Multi-sector		

**D.2 Uganda within multi-country projects where budget information available or approximate share of budget can be allocated**

Project	Funding source	BEIS funding source disaggregated	Total budget	Share of budget	Start date	End date	Priority sector (health, climate change, enterprise)	Sector (sector code from Devtracker)	Type of research (basic (B), social (S), applied (A))	Description; comments; recipient/ implementing partner
Cities and Infrastructure for Growth (CIG)	DFID		£94,431,239	£1,000,000	31/5/18	31/8/23	Climate change	Multi-sector		Three countries; refers to Uganda contract value £20 million (5% allocation to science and technology). Mostly infrastructure but includes renewable energy and % of budget allocated to science and technology Cardno Emerging Markets UK
Africa Clean Energy Programme (ACE)	DFID		£64,999,999	£2,000,000	23/6/16	30/9/21	Climate change	Business	A	14 countries; 45% budget allocated to solar energy and energy research; estimated Uganda share 45% of total budget £64,999,999 divided by 14 countries Includes testing innovative approaches to stimulating private sector investment in/delivery of solar home system products and services ADB, Coffey, DAI, IBRD, AECF, FIAS
Weather and Climate Information Services for Africa (WISER)	DFID		£35,144,126	£3,500,000	5/8/15	30/9/21	Climate change	Environment	A	Five countries in East Africa; total budget £35,144,126; 50% of budget allocated to technological R&D and environmental research; 10% of total budget allocated to Uganda Lake Victoria HyNEWS Consortium (UK Met Office, Met Office Uganda, Uni. of Reading, Environmental Research Council)
Future Climate for Africa (FCFA)	DFID		£19,418,687	£600,000	28/7/14	30/6/21	Climate change	Environment		New climate science to inform decision-making. Making critical water and PH infrastructure more climate resilient in Kampala, Uganda and Kisumu, Kenya; research-informed decision-making for rural livelihoods Mukono, Uganda, and

										Homa Bay, Kenya; water management within the Uganda Water Management Zones. Total budget £19,418,687. Multi-country. HyCRISTAL project (Uganda and Kenya) budget £1.2 million; 50% allocation to Uganda. NERC, PwC, SouthSouthNorth
<b>Tackling waste and plastics pollution</b>	DFID		£13,000,000	£2,999,998	11/9/18	31/5/21	Climate change	Environment		Multi-country project targeting Commonwealth countries; to improve waste management to reduce marine plastic pollution DAI Europe, IMC Worldwide
<b>Transforming Energy Access (TEA)</b>	DFID		£74,748,719	£1,217,902	22/3/16	31/3/24	Climate change	Business		Support early-stage testing and scale-up of innovative technologies and business models to accelerate access to affordable, clean energy services for poor households and enterprises Innovate UK, Acumen, Loughborough University, Energy 4 Impact, Shell Foundation, PwC
<b>Supporting Sub-Saharan Africa's municipalities with sustainable energy transitions</b>	BEIS	EPSRC	£1,683,873	£400,000	10/13	9/18	Climate change	Environment		Three countries (Uganda, Ghana, South Africa) Uganda estimated 25% share of total budget UCL
<b>Bio-energy, fertilisers and clean water from invasive aquatic macrophytes (e.g. water hyacinth)</b>	BEIS (GCRF)		£1,708,769	£565,000	1/19	1/22	Climate change	Agriculture		Three countries (Uganda, India, UK) Uganda estimated 33% share of total budget University of Leeds
<b>Facilitating science to policy: knowledge exchange platform for climate-informed health policy in East and West Africa</b>	BEIS	NERC	£127,101	£40,000	12/17	11/19	Climate change	Health		Two countries (Uganda and Ghana) Uganda estimated 33% share of total budget University of Reading



Creating resilient sustainable micro-grids through hybrid renewable energy systems	BEIS (GCRF)		£1,259,750	£315,000	5/18	4/21	Climate change	Business		Three countries (Uganda, Tanzania, Congo) Uganda estimated 25% share of total budget University of Leeds
Enhanced energy access and local market development in Sub-Saharan Africa	BEIS (GCRF)	ESRC	£676,575	£225,000	9/18	2/20	Climate change	Business		Two countries (Uganda and Zambia) Uganda estimated 33% of total budget University of Oxford
Fleming Fund	DHSC		£234,970,257	£2,780,000	10/10/16	10/10/21	Health	Health		Total budget 23 countries. Uganda share: country grant £1.8 million, lab equipment £0.5 million, fellowships £0.48 million Mott MacDonald led; lead grantee in Uganda Infectious Diseases Institute
Fleming Fund Commonwealth Partnerships for Anti-microbial Stewardship	DHSC		£1,329,270	£400,000	2018	2020	Health	Health		Uganda, Ghana, Tanzania, Zambia; budget share estimated at 25% of total budget
NIHR RIGHT Project	DHSC (NIHR funding)		£4,308,809	£1,200,000	1/9/2019	31/8/23	Health	Health		Improving diagnosis and outcomes of EBV-driven lymphoma in children and young adults Uganda and Tanzania budget £2,437,031; Uganda budget share estimated at 50% University of Oxford and St Mary's Hospital Lacor
NIHR Global Health Research Units and Groups Calls 1 and 2	DHSC (NIHR funding)		£160,000,000	£4,397,010 (see project breakdown below)	1/17	3/21	Health	Health	A	Applied global health research to address under-funded or under-researched global health areas specific to low- and middle-income countries: 12 awards to GHRG and GHRU include Uganda; total budget allocation to Uganda £4,397,010. Individual projects summarised below
Mucosal pathogens				£81,534			Health	Health		UCL in collaboration with UVRI/MRC

<i>Lung health and TB in Africa</i>				£438,054			Health	Health		LSTM and Makerere University
<i>Tackling infections to benefit Africa</i>				£702,918			Health	Health		University of Edinburgh and Uganda Coordinating Office for Control of Trypanosomiasis
<i>Improving asthma outcomes in African children</i>				£214,444			Health	Health		Queen Mary University of London and Makerere University College of Health Sciences
<i>Improving outcomes in sub-Saharan African diabetes through better diagnosis and treatment</i>				£743,825			Health	Health		University of Exeter and UVRI/MRC
<i>Prevention and management of NCDs and HIV infection in Africa</i>				£810,207			Health	Health		LSTM and UVRI/MRC and TASO
<i>Stillbirth prevention and management in sub-Saharan Africa</i>				£145,849			Health	Health		University of Manchester and Makerere University
<b><i>Application of Genomics and Modelling to the Control of Virus Pathogens (GeMVi) in East Africa</i></b>				£35,090			Health	Health		University of Warwick and UVRI and Makerere University
<b><i>Warfarin anti-coagulation in patients with cardiovascular disease</i></b>				£268,053			Health	Health		University of Liverpool and Makerere University
<b><i>Developing psycho-social interventions for mental healthcare</i></b>				£380,474			Health	Health		Queen Mary University of London and Makerere University College of Health Sciences
<b><i>Sepsis in sub-Saharan Africa</i></b>				£410,562			Health	Health		LSTM and Walimu and Innovation Streams
<b><i>Respiratory rehabilitation</i></b>				£166,000			Health	Health		University of Leicester and Makerere University Lung Institute

<b>UK Vaccines Network</b>	DHSC (NIHR funding)		£1,870,492	£600,000	-	-	Health	Health	B	Pre-clinical £24,719,29 Clinical: £34,999,997 Vaccine manufacturing research £16,916,752 Phase 1 studies of a novel chimpanzee adenovirus Rift Valley fever vaccine for adults; MRC/UVRI, Jenner Institute, Pirbright Institute £1,870,492; assume MRC/UVRI share 33%
<b>DFID-MRC Concordat</b>	DFID and MRC			£16,000,000	-	-	Health	Health		Estimated core funding to MRC/UVRI, at £3.5 million/year
<b>Drivers of resistance in Uganda and Malawi: DRUM consortium</b>	BEIS (GCRF)	MRC	£3,046,154	£1,000,000	5/18	1/21	Health	Health	S	Two countries (Uganda and Malawi) Uganda estimated 33% share of total budget LSTM
<b>Reducing early mortality in HIV-infected African adults and children</b>	BEIS	MRC	£2,204,131	£440,825	8/13	3/18	Health	Health	A	Four counties including Uganda; Uganda 20% share of total budget
<b>Transfusion and treatment of severe anaemia in African children: a RCT</b>	BEIS	MRC	£3,264,377	£1,088,125	3/13	10/19	Health	Health	A	Two countries (Uganda and Malawi) Uganda 33% share of total budget
<b>Short enhanced anti-TB and anti-thrombosis treatment for children with TB meningitis</b>	BEIS	MRC	£3,309,523	£662,000	10/18	9/22	Health	Health	A	Four counties including Uganda; Uganda 20% share of total budget
<b>Improving health systems response to chronic diseases in Africa</b>	BEIS	MRC	£918,916	£306,000	12/11	4/17	Health	Health	A	Two countries (Uganda and Tanzania) Uganda 33% share of total budget LSHTM and MRC/UVRI
<b>Antibiotic prophylaxis in miscarriage</b>	BEIS	MRC	£366,205	£1,464,821	6/13	8/17	Health	Health	A	Three countries including Uganda. Uganda estimated 25% share of total budget University of Birmingham

management (AIMS trial)										
Timely blood transfusion for women with PPH	BEIS	MRC	£151,029	£50,000	7/19	6/20	Health	Health	A	Two countries (Uganda and Ghana) Uganda estimated 33% share of total budget LSTM
Antibiotic resistance surveillance network/ Holistic approach to unravel antibiotic resistance in East Africa	BEIS (GCRF)	MRC	£2,852,858	£713,000	5/18	4/21	Health	Health		Three countries (Uganda, Kenya, Tanzania) Uganda estimated 25% share of total budget University of St Andrews
Novel low-cost diagnostic tools and their impact in Africa	BEIS (GCRF)		£1,585,504	£528,500	2/18	1/21	Health	Health	A	Two countries (Uganda and Sierra Leone) Uganda estimated 33% share of total budget University of Glasgow
Understanding data information needs for palliative cancer care to target mobile phone-based intervention development in Uganda and Zimbabwe	BEIS (GCRF)	MRC	£199,390	£66,000	10/18	12/19	Health	Communications	A	Two countries (Uganda and Zimbabwe) Uganda estimated 33% share of total budget University of Leeds
Gestational diabetes in Uganda and India: design and evaluation of educational films for improving screening and self-management	BEIS (Newton)	MRC	£635,226	£212,000	10/15	9/21	Health	Health	A	Two countries (Uganda and India) Uganda estimated 33% share of total budget LSHTM
High dose oral rifampicin to improve survival	BEIS	MRC	£3,881,422	£970,355	6/19	5/23	Health	Health	A	Clinical trial. Three countries (Uganda, South Africa, Indonesia)

from adult TB meningitis										Uganda estimated 25% share of total budget Uganda Infectious Diseases Institute
GCRF-Crick African Network	BEIS (GCRF)	MRC	£6,336,135	£1,267,300	10/17	12/21	-	Health		Capacity development of African scientists. Uganda partner MRC/UVRI (Five African institutions – two in South Africa, one each in Gambia, Ghana and Uganda); Uganda estimated share 20%
Lung health after pulmonary TB: designing strategies to improve long-term patient outcomes	BEIS	MRC	£292,940	£97,650	3/19	3/22	Health	Health	A	Two countries (Uganda and Malawi) Uganda estimated 33% share of total budget LSTM
Assessing the safety of low dose primaquine in P. falciparum infected African children with glucose 6 phosphate dehydrogenase deficiency	BEIS (GCRF)	MRC	£1,974,812	£658,270	9/16	2/20	Health	Health	A	Two countries (Uganda and Democratic Republic of Congo) Uganda estimated 33% share of total budget University of Oxford
M4D Mobile for Development Strategic Partnership (DFID partnership with GSMA): Ensibuuko	DFID		£38,897,280	£250,000	2017		Enterprise	Business		Ecosystem Accelerator: cloud-based banking software customised for savings and credit cooperatives
M4D Mobile for Development Strategic Partnership (DFID partnership with GSMA): Fenix	DFID		£38,897,280	£350,000	2014		Enterprise	Energy		Utilities
M4D Mobile for Development Strategic	DFID		£38,897,280	£300,000	2017		Climate change	Environment		Tracking system to improve faecal sludge collection; waste

Partnership (DFID partnership with GSMA): Kampala City Council Authority										management included in Uganda's definition of climate change priorities
M4D Mobile for Development Strategic Partnership (DFID partnership with GSMA): United Health Care Distributors	DFID		£38,897,280	£300,000	2019		Enterprise	Health		Equipping women to access energy, create sustainable livelihoods, improve family health using innovative batteries and mobile phone technology
Distributed pumped hydro for transforming energy and water access	BEIS	ESRC	£194,257	£65,000	7/19	12/20	Enterprise	Environment		Two countries (Uganda and Malawi) Uganda estimated 33% share of total budget University of Strathclyde and (Uganda) Makerere University
Distributed pumped micro-hydro for transforming energy and water access	BEIS	Innovate UK	£483,012	£160,000	7/19	12/20	Enterprise	Environment		Two countries (Uganda and Malawi) Uganda estimated 33% share of total budget Water Powered Technologies Ltd
Clustering mini-grid networks to widen energy access and enhance utility network resilience	BEIS (GCRF)	EPSRC	£1,019,193	£340,000	5/18	4/21	Enterprise	Business		Two countries (Uganda and Kenya) Uganda estimated 33% share of total budget University of Southampton
GRCF Africa Catalyst	BEIS (GCRF)	Royal Academy of Engineering		£280,000	2016	2019	Enterprise	Business		Royal Academy of Engineering in partnership with Uganda Institution of Professional Engineers (UIPE) Share of budget for Uganda: Ugandan grantees, three awards to UIPE Catalyst pilot launched 2016; three phases of funding rounds

<p><b>African Prize for Engineering Innovation</b></p>	<p>BEIS (GCRF)</p>	<p>Royal Academy of Engineering</p>	<p>£1,627,000</p>	<p>£279,640</p>	<p>2016</p>	<p>2019</p>	<p>Enterprise</p>	<p>Business</p>	<p>Royal Academy of Engineering Ugandan share: 11 of 64 businesses receiving support (technically 11 'projects' within the African Prize for Engineering Innovation project, but given the size of the projects and project budgets these have been counted as one project); pipeline new two-year alumni programme £2 million, of which a share will go to Uganda</p>
<p><b>Higher Education Partnerships in Sub-Saharan Africa</b></p>	<p>BEIS (GCRF)</p>	<p>Royal Academy of Engineering funding</p>		<p>£350,000</p>	<p>2013</p>		<p>Enterprise</p>	<p>Education</p>	<p>Royal Academy of Engineering partnership with Makerere University Ugandan grantees, three awards to Makerere Launched 2013 under different name; renamed when GCRF funding commenced 2016</p>

## Annex E Climate change deep dive

### E.1 Public sector climate-relevant investment

The UK is currently funding five Uganda-specific climate change and STI-related projects through DFID and BEIS, with investment totalling £76.2 million. Two projects, one of which is funded by DFID and one jointly by DFID and BEIS, account for the bulk of this investment.

**Table 11: Climate change: UK public investment in Uganda-specific projects**

Project	Funding source	Budget
Enhancing resilience in Karamoja	DFID	£20,000,000 <sup>59</sup>
Global Energy Transfer Feed-in Tariff (GETFIT)	DFID/BEIS	£51,000,000 <sup>60</sup>
Drought and Flood Mitigation Service	BEIS (UK Space Agency International Partnership Programme, GCRF funding)	£4,800,000
National-scale impact-based forecasting of flood risk in Uganda	BEIS (University of Reading, Natural Environment Research Council funding)	£287,556
Resource-efficient farming by renewable Ugandan irrigation technology	BEIS (Scene Connect Ltd, Innovate UK funding)	£199,970
		£76,287,526

The mapping also identified 12 multi-country climate change-related projects that include Uganda. These projects are funded by DFID and BEIS, with an estimated investment in Uganda totalling £13.1 million. As Table 12 shows, the bulk of this investment is through DFID.

**Table 12: Climate change: UK public investment in Uganda as a share of multi-country projects**

Project	Funding source	Estimated Uganda share of budget
WISER	DFID	£3,500,000
Tackling waste and plastics pollution	DFID	£2,999,998
Africa Clean Energy Programme	DFID	£2,000,000
Transforming Energy Access	DFID	£1,217,902
Cities and Infrastructure for Growth	DFID	£1,000,000
Future Climate for Africa	DFID	£600,000
M4D Tracking system to improve faecal sludge collection in Kampala	DFID	£300,000
Bio-energy, fertilisers and clean water from invasive aquatic macrophytes	BEIS (GCRF funding)	£565,000
Supporting sub-Saharan Africa's municipalities with sustainable energy transitions	BEIS	£400,000
Creating resilient sustainable micro-grids through hybrid renewable energy systems	BEIS (GCRF funding)	£315,000
Enhanced energy access and local market development in Sub-Saharan Africa	BEIS (GCRF funding)	£225,000
Facilitating science to policy: knowledge exchange platform for climate-informed health policy in East and West Africa	BEIS	£40,000
		£13,162,900

As discussed earlier, these projects fall into the following broad categories: energy (affordable, reliable, renewable, and/or sustainable energy); climate resilience (forecasting and/or resilience related to short-term environmental shocks and long-term climate change); agriculture (secure and resilient farming and agricultural systems); sustainable cities; waste management; clean water; and climate-related policy. Most

<sup>59</sup> Estimated share of total project budget that is STI-related


<sup>60</sup> Divided into 50:50 share DFID and BEIS



projects focus on energy and strengthening resilience to climate change. More detailed summaries, including project descriptions, potential impact, and relevance to Ugandan national priorities, are provided below for a selected sample of Uganda-specific and multi-country climate change-related projects.


### Case studies of selected private sector climate-relevant investments

#### Drought and Flood Mitigation Service (DFMS)

<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Project description</div>	<ul style="list-style-type: none"> <li>Predicting potential droughts and responding to the effects of climate change are critical to the country. The project aims to improve climate modelling and its impact on agriculture through the development of an Environment Early Warning Platform (focused on the Karamoja region) that combines satellite and ground-based data with drought and flood models. Information will be distributed by national, local government and commercial operators to farmers, commercial agribusinesses and NGOs. Working with the Uganda National Meteorological Authority, the UK Met Office is leading the production of an improved range of forecasting information by developing a new suite of forecasts from daily to climatic timescales at enhanced resolutions. Combined with the latest earth observations data, these will be used to more accurately predict where and when floods and droughts could occur, and to produce and share better forecasts for the management of water resources.</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Project details</div>	<ul style="list-style-type: none"> <li>Funder: BEIS (UK Space Agency International Partnership Programme funded through GCRF)</li> <li>Partners/intermediaries: RHEA Consortium (RHEA Group, Environment Systems, Pixalytics, Databasix, AA International, AgriTechTalk International, HR Wallingford, The Met Office, Mercy Corps, OPM in partnership with the Uganda National Meteorological Authority, Ugandan Ministry of Water and Environment, Kakira Sugar Company, NGO Green Dreams, iCOW)</li> <li>Amount: £27,499,997</li> <li>Start date: 2016</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Relevance to this mapping</div>	<ul style="list-style-type: none"> <li>Relevant to NDP aims related to infrastructure and agriculture and, specifically, promoting sustainable land use and soil management; relevant to STI focus on infrastructure and agriculture and strategic objectives related to integration of science, technology and innovation in national development and to transfer and adaptation of technologies.</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Reason for highlighting</div>	<ul style="list-style-type: none"> <li>Impact: Save lives and enhance livelihoods; allow local farmers to take action throughout the growing season to maximise crop yields.</li> </ul>	

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#### Weather and Climate Information Services for Africa (WISER)

<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Project description</div>	<ul style="list-style-type: none"> <li>WISER will help at least 24 million people across Africa (focusing initially on East Africa (Ethiopia, Kenya, Tanzania, Uganda, Rwanda and Burundi)) to be more resilient to natural disasters and climate change by 2030 by improving early warning systems and enabling them to make better crop choices or alter planting times in farming. The East Africa component will strengthen weather observation networks and forecasting to inform decision-making, and strengthen climate information partnerships. WISER will initially benefit East African fishing and farming communities on Lake Victoria through the High Impact Weather Lake System (HIGHWAY). Support has been provided to the Uganda National Meteorological Authority to digitalise data; the HIGHWAY project has installed 3D Printed Automatic Weather Stations and MODE-S (aircraft wind speed and temperature receivers); 77 organisations have been trained on weather and climate information, access, use and dissemination.</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Project details</div>	<ul style="list-style-type: none"> <li>Funder: DFID</li> <li>Partners/intermediaries: UK Met Office, DAI Europe, UN Economic Commission for Europe. And Lake Victoria HyNEWS Consortium (UK Met Office, Met Office Uganda, U of Reading, Environmental Research Council)</li> <li>Amount: £3,500,000 (estimated share of budget)</li> <li>Start date: August 2015</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Relevance to this mapping</div>	<ul style="list-style-type: none"> <li>Relevant to NDP aims related to infrastructure and agriculture and, specifically, promoting sustainable land use and soil management; relevant to STI focus on infrastructure and agriculture and strategic objectives related to integration of science, technology and innovation in national development and to transfer and adaptation of technologies.</li> </ul>	
<div style="background-color: white; color: #1a3d4d; padding: 5px; margin-bottom: 5px; font-weight: bold;">Reason for highlighting</div>	<ul style="list-style-type: none"> <li>Impact: Save lives and improve livelihoods; enhanced resilience and economic development through improved generation and use of weather and climate information services. Expected results include: at least 24 million people in Africa receiving climate and weather information services by 2030; 1.6 million people benefitting from reduced impact of weather-related disasters; over £190 million in terms of avoided damages between 2015 and 2030. Specific impacts to include: increased capacity of national meteorological offices and leadership in climate science.</li> </ul>	

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### Bio-energy, fertilisers and clean water from invasive aquatic macrophytes



- The project will focus on using invasive aquatic macrophytes such as water hyacinth in combination with nutrient-rich waste and immobilised microbial systems to maximise the production of biogas whilst generating clean water and recovering nutrients in low-income communities, by developing innovative biotechnology solutions that promote resource efficiency and long-term sustainable services. It will provide practical solutions for processing water hyacinth with other waste (e.g. faecal matter, food waste) in novel bioreactors. These should produce affordable clean energy suitable for use in cooking, refrigeration and power generation. The proposed processes of biogas production will be designed to be appropriate for urban areas and smaller communities. In addition, the project will offer the potential for the recovery of valuable nutrients from the macrophyte feedstock for growing food and for the production of clean water, and provide a solution to the growing problem of invasive macrophytes. The project will support knowledge transfer from the UK and India to Uganda, transforming laboratory scale innovation into full scale application, by engaging with technology providers and operators of biogas test facilities in India and Uganda, and providing direct benefits to local communities.



- Funder: BEIS (GCRF)
- Partners/intermediaries: University of Leeds
- Amount: £565,000 (estimated share of budget)
- Start date: January 2019

- Relevant to NDP aims related to promoting energy efficiency and use of alternative sources of energy; relevant to STI focus on infrastructure and agriculture and strategic objectives related to integration of science, technology and innovation in national development and to transfer and adaptation of technologies.

- Impact: Development of new pathways for the production of clean and affordable energy from water hyacinth, to both solve a major environmental and economic problem (water hyacinth can block waterways, rivers, irrigation canals and lakes, affecting the environment, fishing, water transportation, and agriculture) and provide an alternative to unsustainable use of firewood for cooking. Added benefits for livelihoods, employment and health may include use of water hyacinth as an animal feed, future development of bio-refinery approaches for processing water hyacinth into chemicals and bio-products, and use of clean biogas stoves.

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### On and off grid small scale renewable energy in Uganda (GET-FiT)



- Accelerating the development of private sector-led small scale renewable energy in Uganda by providing a top-up to existing Feed-in Tariffs for renewables to attract private investment; building the capacity of the Ugandan Energy Regulatory Authority (ERA); financing improved grid connections. Outputs are: increased small-scale renewable energy capacity and generation; more balanced portfolio of renewable energy technologies; reduced greenhouse gas emissions; increased number of Ugandan jobs; increased capacity of ERA; increased private and public financing. Expects to improve the environment for private investment in Uganda's renewable energy sector by accelerating the market for off grid solar energy and supporting the construction of at least 17 on-grid small scale power plants.



- Funder: UK International Climate Fund (ICF) via DFID and BEIS
- Partners/intermediaries: UNDP, KfW, DAI Europe, Federal Ministry of Education and Research Germany
- Amount: £27,499,997 (DFID) and £25,800,000 (BEIS)
- Start date: March 2013

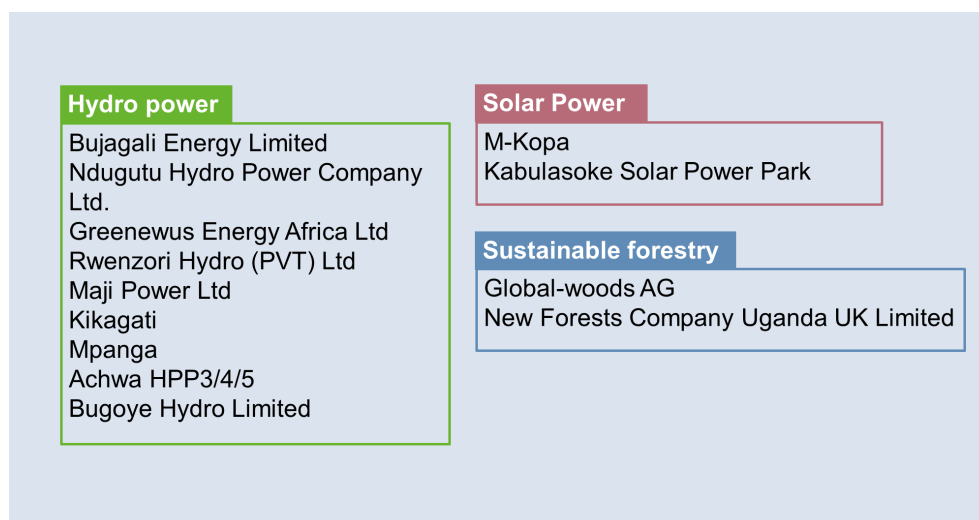
- Relevant to NDP aims related to infrastructure and, specifically expansion of the national electricity power grid network and promoting energy efficiency and use of alternative sources of energy; relevant to STI focus on infrastructure development and strategic objectives related to integration of science, technology and innovation in national development and to transfer and adaptation of technologies.

- Impact: Improved access to energy and promote economic development and growth. Specific outcomes are: improved private sector investment environment for renewable energy in Uganda; improved financial stability of the energy sector; improved local grid stability; and transformational change to the energy sector in Uganda. Expected to increase Uganda's energy production by approximately 20%, improve access to clean and modern energy for over 200,000 households and businesses, and lead to greenhouse gas emission savings of between 1 and 10 MtCO<sub>2</sub>e.

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## E.2 Private sector climate-relevant investment

There are 13 private sector investments that are relevant to climate change. Nine of these are focused on hydropower generation, two on solar power, and two on sustainable forestry.

**Figure 11: Private sector climate-relevant investments**

Two of these investments are made by private companies – the Kubalasoke Solar Power Park, and the New Forests Company sustainable forestry investment – the remainder are CDC funded. A number of other investments – for example, those which focus on improving incomes of smallholder farmers or on increasing access to microfinance – might be considered as climate-relevant, to the degree that they increase resilience to climate shocks.

The two investments focused on solar power, M-Kopa and Kabulasoke Solar Park, are particularly interesting (see more detailed case studies below). In brief, the Kabulasoke investment by Great Lakes Africa Energy is the largest solar power park in east and central Africa. Connected to the national grid, it serves more than 5 million people in rural Uganda – who currently rely on kerosene and other non-renewable energy sources – thereby affording more than 21,000 tonnes in carbon savings. The STI orientation is clear: state of the art solar modules, invertors, and power transformers which ensure high energy yield and minimise energy losses. The CDC M-Kopa investment is noteworthy for two reasons: it provides off-grid energy on a pay-as-you-go basis to 500,000 low-income households in Kenya and Uganda, saving over 600,000 tonnes of CO<sup>2</sup> over four years; and it provides affordable energy and financial inclusion, for which there is a pressing need, as identified in studies of the solar power sector in Uganda.<sup>61</sup>

<sup>61</sup> <https://shellfoundation.org/app/uploads/2018/10/2018-UOMA-Market-Map.pdf>

## Case studies of selected private sector climate-relevant investments

### Private sector climate case study – Great Lakes Africa Energy completes construction of 24MW Kabulasoke Solar Power Park in Uganda



• Jan 2019 – Great Lakes Africa Energy (GLAE) a United Kingdom registered, sub-Sahara focused energy solutions provider has announced the completion of the development of a US\$ 25million solar power generating plant in Uganda.

• Acting as the lead financial and technical investor, GLAE is part of a development consortium comprising of Uganda's Xsabo Power Limited which has been working to deliver the 24MW Kabulasoke Solar Power Park in conjunction with the Uganda Electricity Transmission Company Limited

• Science and Technology: The Kabulasoke solar power park, features Tier 1 poly crystalline solar modules with an efficiency of 17.6 percent which is now highest in the industry ensuring a high energy yield. The engineering design for the project, also integrates a state of the art inverter plus power transformer solution to minimize energy losses. The GLAE Power plant design ensures less than 0.5 percent energy losses for the plant.

• 20-year Power Purchase Agreement (PPA) with the Government of the Republic of Uganda.

• Largest solar power park in East and Central Africa

• The Kabulasoke project, which is connected to the national grid, serves a population of more than 5million in rural Uganda, who currently rely on kerosene; among other non-renewable energy sources while affording more than 21,000 tons of carbon savings.

<https://www.capitalfm.co.ke/business/2019/01/great-lakes-africa-energy-completes-construction-of-24mw-kabulasoke-solar-power-park-in-uganda/>



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### Private sector climate case study – CDC Investment in Solar Power



Since the beginning of 2017, CDC has been an investor in M-KOPA, when we made a \$12 million equity investment in one of Africa's fastest growing, pay-as-you-go solar energy companies. M-KOPA currently provides off-grid energy to 500,000 low-income households in Kenya and Uganda. Its predominantly low-income customer base access lighting, phone charging, radio and TV on daily mobile money payment plans that are less than the typical cost of kerosene. And this week we're announcing additional local currency debt funding which will help the company install solar panels in a further one million homes. Our finance, equivalent to \$20 million, is part of a syndicate of lenders providing \$80 million, the largest commercial debt facility in the off-grid energy sector.

CDC is committed to playing an important role in supporting the off-grid solar (OGS) industry in Africa. OGS covers a broad range of products and services from small solar lanterns to mini-grids and commercial and industrial applications

It is a relatively nascent sector in Africa, so new business models and financing are being explored but access to local currency debt has consistently been in short supply for companies. Our new OGS debt initiative is designed to address the issue for companies whose customers pay in local currency, which we see as a key market need. CDC will be working directly with companies, as well as through local banks and select specialist debt funds, to deploy up to \$150 million equivalent in the sector. In addition to providing finance, CDC aims to work with OGS companies, other lenders and industry stakeholders to strengthen consumer protections, improve environmental and social management and promote data transparency.

M-KOPA customers who complete their payment plans are able to upgrade for more lights, TVs, energy-efficient cooking stoves, smart phones and water tanks. The company has sold well over 160,000 upgrade units to date – including 90,000 Solar TVs. M-KOPA customers currently enjoy over 62.5 million hours of kerosene-free lighting per month and on current estimates will save over 600,000 tonnes of CO2 over four years.

Welcoming the announcement, our CEO, Nick O'Donohoe said:

"M-KOPA is a remarkable company transforming lives in East Africa by providing affordable energy, financial inclusion and essential products for low-income households. It empowers its customers economically, improves people's health and reduces greenhouse gas emissions. Our equity and debt investments are aimed at helping the company build on its success and reach many more of the 600 million people across Africa who currently live without electricity."

Source: <https://www.cdgroup.com/en/news-insight/news/news-new-20-million-cdc-investment-will-help-bring-solar-power-for-a-million-off-grid-homes-in-east-africa/>



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## Annex F Wellcome Trust grants in Uganda

Project title	Short project description	Disease focus and research type
London School of Hygiene and Tropical Medicine/Wellcome Trust research into corneal infections (Uganda, Tanzania, and Nepal) Value: £3 million	Researching alternative, cheaper, accessible, and more effective antifungal eye drops (NB: identified via market intel databases, not Wellcome Trust website).	Applied Corneal infections
Understanding the ethical challenges in the practice of palliative care in Uganda	Empirical bioethics to formulate recommendations for palliative care practice and education, holding stakeholder workshops in Kampala and London to review the draft recommendations for changes in curricula in both countries.	Applied Across disease (could include NCDs)
Severe Malaria Africa – A Consortium for Research and Trials (SMAART)	Identifying gaps in current practice and understanding of the disease in Africa and drugs, or interventions that they aim to investigate over the next four years using observational studies and clinical trials. Findings will improve malaria management.	Applied Malaria
Integrating the management of depression in routine HIV care in Uganda (the HIV+D trial)	This project aims to evaluate a model for the integration of mental healthcare in public HIV care services in Uganda. The proposed model will be based on the Manas intervention, which is a mental health integration model that was successfully evaluated in public primary healthcare in India (in a non-HIV population). This study will develop and adapt the intervention to HIV care in Uganda and subject the adapted intervention to a clinical trial.	Applied HIV
Assessing the impacts of insecticide resistance on vectorial competence of <i>Anopheles gambiae</i> from Uganda	Studying molecular changes in mosquitoes that make them resistant to insecticides and determining if these changes may also affect parasite growth in the mosquito.	Basic Malaria
Pilot: A development study to examine the feasibility and acceptability of pulmonary rehabilitation in Uganda for adults with chronic respiratory disease	No description offered other than project title (JGHT).	Applied NCDs
<b>NB: Grants below this line were started prior to 2014, so (strictly speaking) fall outside the scope of the mapping</b>		
Tracking tsetse: applying landscape genetic approaches to guide strategies for eliminating human African trypanosomiasis	Investigating tsetse population dynamics in human African trypanosomiasis foci in north-western Uganda, undertaking ecological and molecular genetic studies to better understand factors that impel disease transmission.	Basic Neglected tropical diseases
Transmission dynamics of African swine fever in an endemic setting at the livestock–wildlife interface	Investigating the role of soft ticks in the spread and maintenance of African swine fever, determining molecular genetic and evolutionary characteristics of African swine fever at the livestock–wildlife interface to reveal transmission networks.	Basic Animal health
Women and the spread and adaptation of biomedical knowledge in Uganda, 1897–1979	No project description available other than the title.	Social Across disease
Adjunctive Sertraline for the treatment of HIV-associated cryptococcal meningitis	No project description available. This study is contributing data towards a new indication for an existing, registered drug, hence it has been coded as applied research (JGHT). Note this is a Joint Global Health Trials Scheme project, funded by Wellcome Trust, DHSC, DFID, and MRC; MRC runs the scheme. This project is also included in the public sector project summary table.	Applied HIV

<b>Study on parasitic infections and asthma in Uganda</b>	Investigating the risk factors associated with asthma in childhood, with an emphasis on chronic immune-modulating infections such as worms and malaria.	Basic Communicable disease effect on NCDs
<b>Pilot study – uptake and impact of HIV combination (HIVCOMB) interventions on HIV incidence among fishing communities in Uganda</b>	No project description available (JGHT).	Applied HIV
<b>School-based treatment with ACT to reduce transmission: evaluation of the community impact of intermittent preventive treatment for malaria in Uganda</b>	No project description available (JGHT).	Applied Malaria
<b>Helminths and allergy in Uganda</b>	Studying the effects of chronic immunomodulating infections on immune responses to vaccines and on infectious and allergic disease incidence.... building research capacity in Africa.	Applied Communicable disease effect on NCDs

**Table 13: Wellcome Trust funding recipients involved in the above-listed grants**

UK institutions	#	Ugandan institutions	#
University of Bristol	1	Busitema University Faculty of Health Sciences	1
Imperial College London	1	Makerere University	4
University of Oxford	2	UVRI	3
University College London	2		
Liverpool School of Tropical Medicine	4		
Plymouth University	1		
Wellcome Trust Sanger Institute	1		
MRC–University of Glasgow Centre for Virus Research	1		
London School of Hygiene and Tropical Medicine	3		
University of Warwick	1		

**Annex G UK companies with more than 25% ownership of a Ugandan subsidiary**

Company name	Subsidiary Name	Subsidiary information date	Sector focus and comments
16 Miles LLP	Orient Bank Limited	01/02/2015	Bob Geldoff's venture fund; this deal was partly CDC-financed. Financial services
20 Miles LLP	Biyinzika Poultry International Ltd	01/06/2016	Bob Geldoff's venture fund; this deal was partly CDC-financed. Food and agriculture
ABI SAB Group Holding Limited	Nile Breweries Ltd	01/03/2016	Food and beverage
ABI SAB Group Holding Limited	Rwenzori Bottling Co Ltd	01/03/2016	Food and beverage
ABI SAB Group Holding Limited	Namanve Property Co Ltd	01/03/2016	Possibly food and beverage?
AON PLC	Minet Limited	01/01/2015	Insurance
Blencowe Resources PLC	Consolidated African Resources Ltd	01/10/2019	Natural resources sector
British American Tobacco (Investments) Limited	British American Tobacco Uganda Limited	01/06/2019	Tobacco
British American Tobacco PLC	British American Tobacco Uganda Limited	01/12/2018	Tobacco
British American Tobacco PLC	Uganda Tobacco Processors Ltd	01/12/2018	Tobacco
CDC Group PLC	Utkarsh Microfinance	01/12/2017	CDC-backed, India-based microfinance offering group loans to under-served individuals, mainly women
CDC Group PLC	DFCU Limited	01/06/2017	CDC-backed financial services
Diageo PLC	East African Maltings Uganda Ltd	01/06/2018	Food and beverage
Diageo PLC	International Distillers Uganda Ltd	01/06/2018	Food and beverage
Diageo PLC	Uganda Breweries Ltd	01/06/2018	Food and beverage
Dimension Data Holdings Limited	Dimension Data Uganda Ltd	01/07/2019	ICT/digital solutions
Dimension Data Holdings Limited	Internet Solutions Uganda Limited	01/07/2019	ICT/digital solutions
Eaton Towers Limited	Eaton Towers Uganda Ltd	01/12/2016	Mobile data connectivity towers
Eaton Towers Limited	Uganda Towers Ltd	01/02/2016	Mobile data connectivity towers
G4S PLC	G4S Oil And Gas Solutions (U) Ltd	01/12/2018	Security solutions, facilities management
G4S PLC	G4S Secure Solutions Uganda Limited	01/12/2018	Security solutions, facilities management
G4S PLC	US Defence Systems LLC (Uganda)	01/12/2018	Security solutions, facilities management
Hunting PLC	Hunting Energy Services (Uganda) Ltd	01/12/2018	Oil and gas
Kentz Corporation Ltd	Kentz Engineers And Constructors Uganda Ltd	01/12/2016	Construction
Knight Frank LLP	Knight Frank (U) Ltd	01/03/2017	Real estate
Linde Public Limited Company	BOC Uganda Ltd	01/12/2018	Industrial gases serving a wide range of industry sectors

<b>Lonrho Africa (Holdings) Limited</b>	African Expeditions Uganda Ltd	01/06/2018	Air transport and tourism (NB: Fastjet is part of Lonrho)
<b>Marie Stopes International</b>	Marie Stopes Uganda	01/12/2014	Women's health services
<b>Metka – EGN Limited</b>	Metka EGN Uganda SMC Ltd	01/06/2018	Construction
<b>Mott Macdonald International Limited</b>	Mott Macdonald Uganda Ltd	01/05/2011	Management consultancy, specialising in aid sector
<b>NES Global Limited</b>	NES Global Ltd	01/10/2015	Recruitment services, technical and engineering jobs
<b>New Forests Company Uganda UK Limited</b>	New Forests Company Limited	01/06/2013	Sustainable forestry
<b>OM Residual UK Limited</b>	UAP Old Mutual Properties Uganda Limited	01/12/2017	Insurance
<b>OM Residual UK Limited</b>	UAP Financial Services Ltd	01/12/2017	Insurance
<b>OM Residual UK Limited</b>	Liberty Life Assurance Uganda Ltd	01/12/2017	Insurance
<b>Pearson PLC</b>	Pearson Longman Uganda Ltd	01/12/2018	Education, publishing
<b>Prudential Public Limited Company</b>	Prudential Assurance Uganda Limited	01/12/2017	Insurance
<b>Randgold Resources Ltd</b>	Border Energy East Africa Pty Ltd	01/12/2017	Mining
<b>Rentokil Initial PLC</b>	Rentokil Initial Uganda Limited	01/12/2016	Pest and insect control
<b>Stanbic Africa Holdings Limited</b>	Stanbic Bank Holdings Limited	01/06/2019	Financial services
<b>Stanbic Africa Holdings Limited</b>	Stanbic Bank Uganda Ltd	01/06/2019	Financial services
<b>Standard Chartered Bank</b>	Standard Chartered Bank Uganda Limited	01/12/2016	Financial services
<b>Standard Chartered PLC</b>	Standard Chartered Bank Uganda Limited	01/12/2018	Financial services
<b>Standard Chartered PLC</b>	East African Development Bank Retirement Benefits	01/12/2018	Financial services
<b>Trinity Acquisition PLC</b>	Willis Towers Watson Uganda Insurance Brokers Ltd	01/12/2017	Insurance
<b>Unilever PLC</b>	Unilever (Uganda) Ltd	01/12/2018	Consumer goods
<b>Vetpharm International Holdings Limited</b>	Bimeda Uganda Ltd	01/12/2012	Veterinary – wholesaler healthcare organisation
<b>Willis Group Limited</b>	Gras Savoye Uganda TNS. Brokers SA	01/12/2017	Insurance
<b>WPP Jubilee Limited</b>	Hill and Knowlton Strategies Uganda Limited	01/12/2017	Public relations
<b>WPP Jubilee Limited</b>	JWT Uganda Ltd	01/12/2017	Public relations
<b>WPP Jubilee Limited</b>	Scanad Uganda Ltd	01/12/2017	Public relations
<b>WYG Limited</b>	WYG Projects Uganda Limited Formerly Delta Partnership Uganda Limited	01/03/2018	International development consultancy



## Annex H CDC investments in Uganda

Name	Details	Sector	Start date	Fund
Mukoki HPP Ltd		Infrastructure	01/01/2019	DI Frontier Fund 2
Citadel Holdings		Health	01/11/2018	African Rivers Fund
Ziba Ltd		Infrastructure	01/10/2018	DI Frontier Fund 2
TMR		Health	01/09/2018	African Rivers Fund
Bujagali Energy Limited	\$44 million debt investment by CDC in July 2018. Bujagali Energy Ltd owns and operates a 250 MW hydropower plant on the Nile River in Uganda. The power plant was commissioned in 2012 and supplies energy to the Ugandan electricity grid. Investment aims to help to decrease the tariff for Bujagali, thereby reducing the cost of power to end users, which will increase the overall demand for power, generating economic activity and jobs.	Infrastructure	01/07/2018	
Simba Oil Ltd		Others	01/03/2018	African Rivers Fund
Elemental Energy Ltd.		Infrastructure	01/12/2017	DI Frontier Fund 2
Ndugutu Hydro Power Company Ltd.		Infrastructure	01/12/2017	DI Frontier Fund 2
Greenewus Energy Africa Ltd	Greenewus Energy Africa Ltd. is a special purpose vehicle established with the sole purpose of developing and implementing the Kakaka Hydro Power Project. The Kakaka project is a 5 MW hydropower plant utilising the hydropower potential of the River Rwim.	Infrastructure	01/12/2017	DI Frontier Fund 2
Ecopharm Ltd		Health	01/10/2017	African Rivers Fund
Rwenzori Hydro (PVT) Ltd	The Nyamagasani 1 Hydro Power Project intends to utilise the hydro potential of the river Nyamagasani as it drops down over a high-altitude plateau while flowing down from the upper forested region of Mount Rwenzori. The river has a catchment area of approximately 92 km <sup>2</sup> , predominantly inside the Rwenzori National Park. Rwenzori Hydro (PVT) Ltd is the project company for the Nyamagasani 1 Hydro Power Project.	Infrastructure	01/09/2017	DI Frontier Fund 2
M&N Cleaning		Other consumer services	01/07/2017	African Rivers Fund
Telcare Ltd		Communications and IT services	01/07/2017	African Rivers Fund
Kare Distribution		Food and agriculture	01/05/2017	African Rivers Fund
Pharmcent Limited (Guardian Healthcare Limited)		Health	01/05/2017	Ascent Rift Valley Fund I
Qualicoff		Food and agriculture	01/05/2017	African Rivers Fund
Maji Power Ltd	Maji Power is an operational and development company established to provide construction and operational support to Ugandan hydro projects.	Infrastructure	01/12/2016	Africa Renewable Energy Fund

<b>Kikagati</b>	Kikagati is a 16 MW greenfield project in south-western Uganda; it is a landmark private cross-border hydro project that has improved collaboration between Uganda and Tanzania. The project will supply and boost electrification in an under-served part of Tanzania and help meet projected supply shortfall in Uganda.	Infrastructure	01/09/2016	Africa Renewable Energy Fund
<b>African Queen Uganda Holdings Ltd</b>	African Queen Ltd is a privately owned Ugandan company specialising in importing, distributing, and marketing high-quality products, including hair care, personal care, home care, and foods.	Other consumer services	01/12/2015	Ascent Rift Valley Fund I
<b>Mpanga</b>	Mpanga is a hydro-electric power plant that has been operating in Uganda since 2011.	Infrastructure	01/10/2015	Interact Climate Change Facility
<b>Achwa HPP3/4/5</b>	Achwa HPP3,4,5 is a portfolio of three hydro plants in the early development stage in Northern Uganda.	Infrastructure	01/09/2015	Africa Renewable Energy Fund
<b>Bugoye Hydro Limited</b>	Bugoye is a 13 MW operational hydro plant in Western Uganda developed and operated by Tronder Power, with Norfund as a minority shareholder.	Infrastructure	01/09/2015	Africa Renewable Energy Fund
<b>Chims Africa Ltd</b>	An MTN franchise dealing in the distribution of airtime and phone accessories; now MTN's leading mobile money agent.	Communications and IT services	01/08/2015	Ascent Rift Valley Fund I
<b>Global-woods AG</b>	Global-woods AG is a forestry company in the Kikonda Forest Reserve in Uganda, which has been operating under a tree-farming licence to establish and manage the 12,182 hectare forest since 2002. A variety of tree species are grown in the plantation to produce saw-logs and fuel wood.	Food and agriculture	01/03/2015	GEF Africa Sustainable Forestry Fund LP
<b>Orient Bank Limited</b>	Orient Bank, established in 1983, is a mid-tier commercial bank licensed by the Bank of Uganda to provide banking, stockbroking, and other related financial services to its client base of primarily SMEs and retail customers in Uganda.	Financial services	01/02/2015	8 Miles
<b>Uganda (CMI)</b>	Catalyst Microfinance Investment Management Company invests to establish and grow greenfield microfinance operations across Africa and Asia, frequently under the ASA brand.	Financial services	01/12/2014	Catalyst Microfinance
<b>ARPE Limited</b>	ARPE is a project company which is developing, constructing, and operating a series of hydro power projects in Gulu, Northern Uganda.	Infrastructure	01/10/2014	Africa Renewable Energy Fund
<b>SolarNow</b>	SolarNow sells modular household solar systems, along with appliances, to the off-grid market in Uganda. The systems are modular so customers can upgrade to larger capacities as their energy needs increase.	Financial services	01/10/2014	Novastar Ventures East Africa Fund I LP
<b>Biyinzika Poultry International Limited</b>	Biyinzika Poultry International Limited is a producer and supplier of day-old broiler and layer chicks in Uganda.	Food and agriculture	01/05/2014	8 Miles
<b>Nyamagasani II HPP Ltd</b>	The Nyamagasani 2 Hydro Power Project intends to utilise the hydro potential of the river Nyamagasani to produce a generating capacity of approximately 7 MW.	Infrastructure	01/11/2013	DI Frontier Market Energy & Carbon Fund
<b>Elgon Hydro Siti (PVT) Ltd</b>	Elgon Hydro Siti (PVT) Ltd. is a special purpose vehicle established with the sole purpose of developing and implementing the Siti I and II Hydro Power Project. The Siti I project is a 5 MW project utilising the hydropower potential of the river Siti.	Infrastructure	01/09/2013	DI Frontier Market Energy & Carbon Fund
<b>Uganda Finance Trust Ltd</b>	Uganda Finance Trust Limited, commonly known as Finance Trust, is a microfinance institution in Uganda. It is licensed as a deposit-taking microfinance institution by the Bank of Uganda, the national banking regulator.	Financial services	01/08/2013	Progression Eastern African Microfinance Equity Fund

<b>Lubilia Kawembe Hydro Ltd</b>	Lubilia Kawembe Hydro Ltd. is a special purpose vehicle established with the sole purpose of developing and implementing the Lubilia Hydro Power Project. The Lubilia project is a 5.4 MW hydropower plant utilising the hydropower potential of the river Lubilia.	Infrastructure	01/06/2013	DI Frontier Market Energy & Carbon Fund
<b>GAF Uganda Portfolio</b>	GroFin is an SME development financier assisting entrepreneurs and business owners. This entry represents 16 investments made to a diversified group of small businesses in Uganda through the GroFin East Africa fund. For more information see <a href="http://www.grofin.com">www.grofin.com</a> .	Financial services	01/06/2009	Grofin Africa Fund
<b>DFCU Limited</b>	DFCU is one of Uganda's largest commercial banks. It focuses on business lending to under-served audiences, particularly to SMEs and smallholders operating in the agricultural sector, and to women in business. DFCU operates over 67 branches and over 100 ATMs across the country. In 2013, CDC supported DFCU with a \$10 million loan. The loan was repaid in April 2018. CDC is a shareholder in DFCU, alongside Arise, an investment vehicle created by the Netherland's Rabo Development, Norway's NorFinance, and the Dutch development bank. CDC has supported the bank since 1964. Its investment will increase access to affordable mainstream finance to under-served markets. Many women in Uganda struggle to access finance. With property passing from males to males, women struggle to offer collateral to lenders. And while women own about 40% of the country's SMEs, and employ about 2 million people, they receive less than 10% of commercial credit. CDC's investment in DFCU helps women entrepreneurs overcome the challenges of running a business. DFCU's Women in Business programme has supported several thousand businesswomen by providing loans at preferential rates, alongside training, networking opportunities, and mentor programmes. This enables female entrepreneurs to expand their businesses and to create direct and indirect jobs. DFCU also provides long-term development finance to the SME sector, which is a key driver of economic growth in the country.	Financial services	01/01/2003	
<b>M-Kopa</b>	Investment in Kenya and Uganda. CDC is committed to playing an important role in supporting the off-grid solar industry in Africa. Off-grid solar covers a broad range of products and services from small solar lanterns to mini-grids and commercial and industrial applications. Its predominantly low-income customer base access lighting, phone charging, radio, and TV on daily mobile money payment plans that are less than the typical cost of kerosene. CDC has introduced an additional local currency debt funding which will help the company install solar panels in a further 1 million homes. CDC's finance, equivalent to \$20 million, is part of a syndicate of lenders providing \$80 million, the largest commercial debt facility in the off-grid energy sector. Solar energy is a relatively nascent sector in Africa, so new business models and financing are being explored but access to local currency debt has consistently been in short supply for companies. CDC's new off-grid solar debt initiative is designed to address the issue for companies whose customers pay in local currency, which is a key market need. CDC will be working directly with companies, as well as through local banks and select specialist debt funds, to deploy up to \$150 million equivalent in the sector. In addition to providing finance, CDC aims to work with off-grid solar companies, other lenders, and industry stakeholders to strengthen consumer protections, improve environmental and social management, and promote data transparency.	Infrastructure, Start date: 11/10/2017 NB: Identified via Devtracker and news reports, not the CDC website (investment is multi-country)		

## Annex I Additional deals identified through news articles and market intel databases

Deal title/media report headline	Funding source or UK firm participant	Budget applied	Start date	End date	STI status	Priority sector	Sector	Comments/expected impact
Formation of Joint Venture to Accelerate Growth of KFC Franchise Portfolio in East Africa	Vivo Energy		20/06/19		No		Food and agriculture	In June, the company agreed to form a joint venture with Kuku Foods East Africa Holdings to expand its fast food chain KFC franchise in Uganda, Kenya, and Rwanda. <a href="http://www.vivoenergy.com/Media-Centre/Press-Releases/Details/Formation-of-Joint-Venture-to-Accelerate-Growth-of-KFC-Franchise-Portfolio-in-East-Africa">www.vivoenergy.com/Media-Centre/Press-Releases/Details/Formation-of-Joint-Venture-to-Accelerate-Growth-of-KFC-Franchise-Portfolio-in-East-Africa</a>
Uganda's Ministry of Agriculture signs memorandum of understanding (MoU) with 2 UK companies (Alvan Blanche)	UKEF: The joint ventures will seek 85% total financing of the project from the UK Export Finance (UKEF) via an export credit facility being offered by the UK government. 15% will be Government of Uganda contribution		07/05/19		<ul style="list-style-type: none"> <li>•One of the priorities under the Agriculture Sector Strategic Plan (2015/16 to 2019/20) is to improve access to agricultural markets and value addition for the 12 priority commodities (maize, beans, rice, tea, coffee, bananas, dairy, fish, livestock, meat, fish and vegetables) and four strategic commodities (oil palm, oil seeds, cocoa and cotton). Under the grains value chains, the</li> </ul>		Food and agriculture	Source: Publication info: Ventures Africa, Abuja: SyndiGate Media Inc. The joint venture between M/S Alvan Blanch Development Company and Colas Limited will manufacture, supply, install, and commission multiple post-harvest processing systems. The memorandum of understanding will also include delivery of related training and construction of associated infrastructure. The partnership aims to: improve the value of agricultural produce through the installation of value addition facilities; the ministry will establish collection centres for priority commodities by buying and installing 112 batch drying, cleaning, and grading systems of grains, cereals (such as maize), rice, and pulses (such as beans, soya beans) across the country; procure and install 12 fruit processing plants in identified locations; increase storage facilities to accommodate increased processed output; MAAIF will build 19 bulk storage facilities (silos) with a capacity of 2,000 MT; make more food available to humans and feed for livestock, poultry and fisheries; the ministry will procure and install 10 milling plants and nine feed processing plants in strategic locations after carrying out the necessary feasibility studies; develop community-based agro-processing capacity for self-employment and uplifting of local community through engaging farmer groups; a private–public partnership will be established with registered farmer groups and private farmers to run this infrastructure; instil a culture of bulking for value addition and better marketing strategies among those selected farmer groups that will partner in this arrangement Impact

					government acknowledges that there is a need to increase grain processing capacity while improving post-harvest handling and management to match the crop production levels in the country. This will also increase farmers' access to regional and international markets.			<ul style="list-style-type: none"> <li>This will supplement other already initiated partnerships created by government to enable Uganda's private sector to increase investment in processing and value addition. For example, in financial year 2019 to 2020, the ministry has, through NAADS, committed UGX 55 billion to set up grain, fruit and feeds processing plants in the districts of Yumbe, Kapeeka, Nwoya, and Kayunga. This partnership also includes Uganda Prisons, Uganda Development Corporation, and the Ministry of Trade, Industry and Cooperatives</li> </ul>
<b>Tullow Oil provides AGM Trading update</b>	Tullow Oil	130 million	25/04/19		?		Mining, oil and gas	Source: company press release. Uganda expenditure of \$130 million (which has been revised down from \$180 million) that will be funded through the Uganda farm-down
<b>Development of Kampala Industrial and Business Park in Namanve</b>	UKEF	246 million	22/01/19		Partially		Infrastructure	<p>Source:  <a href="https://constructionreviewonline.com/2019/01/uganda-to-secure-us-246m-for-kampala-industrial-park/">https://constructionreviewonline.com/2019/01/uganda-to-secure-us-246m-for-kampala-industrial-park/</a></p> <p>Impact:                      The loan is set to address infrastructural works within the park, such as roads, information communication infrastructure, sewerage and waste management systems, drainage, and high voltage power, among others.                      It will also take into consideration a new fly-over that will be constructed from Namanve North through the circumference of Coca Cola company premises, before connecting to the South Estates. In addition, a SMEs space is part of the plan. Uganda Investment Authority expects to at least construct 500 spaces for small-scale entrepreneurs</p>
<b>Great Lakes Africa Energy</b>	Great Lakes Africa	25 million	08/01/19		Yes	Climate	Infrastructure	<a href="#">January 2019 – GLAE, a United Kingdom registered, sub-Saharan focused energy solutions provider, has announced</a>

completes construction of 24MW Kabulasoke Solar Power Park	Energy (GLAE)						<p><a href="http://www.capitalfm.co.ke/business/2019/01/great-lakes-africa-energy-completes-construction-of-24mw-kabulasoke-solar-power-park-in-uganda/">the completion of the development of a US\$25 million solar power generating plant in Uganda</a>  <a href="http://www.capitalfm.co.ke/business/2019/01/great-lakes-africa-energy-completes-construction-of-24mw-kabulasoke-solar-power-park-in-uganda/">www.capitalfm.co.ke/business/2019/01/great-lakes-africa-energy-completes-construction-of-24mw-kabulasoke-solar-power-park-in-uganda/</a></p> <p>Impact:                  20-year Power Purchase Agreement (PPA) with the Government of the Republic of Uganda.                  Largest solar power park in East and Central Africa                  The Kabulasoke project, which is connected to the national grid, serves a population of more than 5 million in rural Uganda, who currently rely on kerosene, among other non-renewable energy sources, while affording more than 21,000 tons of carbon savings.</p>
Uzima Chicken	AgDevCo	490,760	01/01/19		Yes		<p><a href="http://www.agdevco.com/our-investments.html">www.agdevco.com/our-investments.html</a></p> <p>Impact:                  Expected impact: 2,272 microentrepreneurs established as agents; 200,000 smallholder farmers linked to market; \$61 increase in smallholder farmers' annual income. SDU role: AgDevCo's SDU is accelerating Uzima's expansion into the Ugandan market. Its committed budget is contributing to the recruitment, training, and salaries of Uzima's veterinary staff and the costs of distributing day-old chicks efficiently across Uzima's agent network. Both services are vital to successful market expansion and the anticipated positive impact for up to 200,000 smallholder farmers. Increased poultry meat and egg consumption in the local communities will also improve current low-protein diets and fight malnutrition.</p>
Nakifuma Farming Company	AgDevCo	Committed investment: 2,600,000; Investment made: 800,000	01/01/19		Yes		<p><a href="http://www.agdevco.com/our-investments.html">www.agdevco.com/our-investments.html</a></p> <p>Impact: Expected impact: \$20,000 total annual income for employees; 3,300 smallholder farmers linked to market; \$600,000 increase in smallholder farmers' annual income. AgDevCo role: Nakifuma Farming Company is a greenfield investment founded by AgDevCo and Centurion Agricultural Partners to establish a new 390-sow pig breeding and finishing unit on the outskirts of Kampala, Uganda. The company will be one of only a handful of commercial-scale pork farms in the country. Nakifuma will use improved genetics and animal husbandry practices to</p>

								deliver quality meat to satisfy the rapidly growing local demand.
<b>Colas UK Assists UK Government in Securing Largest Ever Loan For Construction of New Ugandan Hoima International Airport</b>	UKEF	215 million	04/01/18		Yes, interview with Colas MD Lars Peter Jensen revealed that there is significant skills transfer and use of new technology		Infrastructure	<p>Source: company press release. The construction of the new Hoima International Airport will now commence, delivered by Colas' newly formed joint venture SBC.... This will help to close the infrastructure gap in Uganda and create local economic growth and jobs.</p> <p>Impact: 800 Ugandans employed, 15 expats. Colas provides on-site training. % of local content requirements met. 260 million euro contract. joint venture contract 85% export finance and 15% commercial loan from Standard Charter Bank. 1.5 years into the project now. This is the biggest single loan given by UKEF to a single project in Uganda. Source: interview data.</p>
<b>ESCO Uganda Ltd</b>	AgDevCo	522,192	01/01/18		Yes		Food and agriculture	<p><a href="http://www.agdevco.com/our-investments.html">www.agdevco.com/our-investments.html</a></p> <p>Expected impact: 39 jobs created/maintained; 17,900 smallholder farmers linked to market; 65% increase in smallholder farmers' productivity; SDU role: Smallholder cocoa farmers in Uganda's Western province are subject to price fluctuations on the international markets and increasing competition from West Africa. SDU support is enabling ESCO to increase value chain efficiencies with minimal impact on its high technical standards. By introducing technology to facilitate training by video, improving processes, and streamlining the certification processes, ESCO's product quality can be maintained with a much leaner and more cost-effective team.</p>
<b>Great Lakes Coffee</b>	AgDevCo	Committed investment and investment made: 3 million	01/01/18		Yes		Food and agriculture	<p><a href="http://www.agdevco.com/our-investments.html">www.agdevco.com/our-investments.html</a> <a href="#">Great Lakes Coffee is a Ugandan company, established in 1999, which sources, mills, and exports high-quality Arabica coffee to green coffee traders such as Falcon Coffees (UK), which in turn is sold in retail outlets such as Wholefoods and Starbucks. The company also roasts coffee for wholesale customers in Uganda and runs a barista training programme for unemployed youth.</a></p> <p>Expected impact: 21,000 smallholder farmers linked to market; \$2,500,000 increase in smallholder farmers' annual income; 22% female smallholders linked to market. AgDevCo role: AgDevCo's multi-million dollar trade finance facility will allow the company to purchase coffee from</p>

								more than 21,000 smallholder farmers and cooperatives across Uganda.
<b>WorldRemit, Centenary Bank partner to provide remittance service to Ugandans living abroad</b>	WorldRemit & Centenary Bank		14/12/17		No		Financial services	
<b>The Village Enterprise Development Impact Bond (DIB)</b>	Private investors and philanthropic sources, e.g. The Bridges Impact Foundation UK	1 million	01/11/17	01/11/20	Yes	Enterprise	Financial services	Seed capital, training, and mentoring to start more than 4,600 small sustainable businesses in rural Kenya and Uganda by 2020. Village Enterprise has raised US \$3.5 million of working capital from private investors and philanthropic sources to provide first-time entrepreneurs who live in extreme poverty with seed capital, training, and mentoring to start more than 4,600 small sustainable businesses in rural Kenya and Uganda by 2020. <a href="https://golab.bsg.ox.ac.uk/knowledge-bank/case-studies/village-enterprise-dib/">https://golab.bsg.ox.ac.uk/knowledge-bank/case-studies/village-enterprise-dib/</a> . Assume 30% of funds going to Uganda, with remaining 70% to central management and Kenya
<b>Xpress Money partners with DFCU Bank to offer convenient money transfer services in Uganda</b>	Xpress Money		26/09/17		No		Financial services	Source: company press release. Xpress Money, one of the most dependable money transfer brands in the world, has partnered with DFCU Bank, the second largest bank in Uganda, to offer customers the convenience of transferring money across DFCU Bank branches.
<b>Standard Chartered partners with MTN Uganda to launch Straight2Bank Wallet</b>	Standard Chartered Bank		15/06/16		Yes		Financial services	Source: company press release. 'Mobile wallets are especially useful for companies such as; development organisations, international organisations, agricultural companies and fast-moving consumer goods companies which process high volumes of individual payments to beneficiaries such as; aid workers, trainers, policy holders and farmers.'
<b>Intertek renews contract with UNBS for PVoC to Standards Program</b>	Intertek		10/06/16		?		Consumer services	Source: company press release. Intertek Group plc has signed a further three-year contract with the Uganda National Bureau of Standards, or UNBS, to continue to manage its Pre- Export Verification of Conformity, or PVoC, to Standards Programme. The programme verifies the conformity of all regulated products in the respective exporting countries including: food, chemicals, electricals



								and electronics, textiles, health and beauty products, machinery, building products and toys, ensuring they comply with the applicable Ugandan technical regulations and quality standards, assuring Uganda's citizens of the quality of imported goods.
<b>Gulu Agricultural Development Company (GADC)</b>	AgDevCo	Committed budget: 810,000; Committed investment: 5 million; Investment made: \$3,475,000	01/01/16		Yes		Food and agriculture	<p><a href="http://www.agdevco.com/our-investments.html">www.agdevco.com/our-investments.html</a></p> <p>Expected impact: 10,000 smallholder farmers linked to market; 60% female smallholders linked to market; \$2,000,000 total annual income for smallholders. AgDevCo role: AgDevCo is providing \$5,000,000 in working capital to GADC as part of a consortium with other social lenders. Established in 2009, GADC provides inputs, training and marketing access for tens of thousands of local farmers and was one of the first commercial companies to establish operations in Northern Uganda following the end of the civil war. SDU role: AgDevCo's SDU team has supported a successful outgrower scheme in the Kitgum area and is now improving farming skills in the West Nile region. The \$810,000 budget is being used to develop a modular training programme for conventional and organic cotton, sesame, and chilies, spanning activities from land preparation to post-harvest handling, with an emphasis on organic farming. The project aims to increase crop yields and quality, link over 30,000 smallholder farmers to reliable markets, and improve access to finance.</p>