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development

Innovation Value Chains in East and Southern Africa and the Key Gaps

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Question

What evidence tells about the key gaps in East and Southern Africa's innovation value chain (concept to commercialisation)?

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The K4D helpdesk service provides brief summaries of current research, evidence, and lessons learned. Helpdesk reports are not rigorous or systematic reviews; they are intended to provide an introduction to the most important evidence related to a research question. They draw on a rapid desk-based review of published literature and consultation with subject specialists.

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1. Overview

To realize a functional innovation value chain in East and Southern Africa (e.g., in health technology, sanitation, clean energy, agricultural technology or bio-innovation), an integrated approach will be necessary – involving scientists, government, the private sector and donor organizations (OECD 2013; Liavoga et al., 2016). Bold initiatives and visionary thinking are needed to build the systems to link key competencies and skills necessary to develop a vibrant innovation system (Liavoga et al., 2016). There are many opportunities where African countries can be competitive, either through adapting, adopting and applying bioscience technologies originating elsewhere in the world, or through exploiting some unique factor such as its biodiversity and indigenous knowledge (Vervoort et al. 2013).

However, the course of building complex innovation value chains in East and Southern Africa – involving several actors and processes (e.g. idea generation, conversion of ideas into innovative products, and innovation diffusion or commercialization) – is hampered by several gaps and challenges. Some of the common gaps and barriers limiting innovation, private sector investment, and innovation commercialisation (in different sectors) include: lack of capital, i.e. access to affordable finance (short and medium term) for setup, inventory and working capital; weak market knowledge, i.e. lack of country, locality or sector awareness; weak business models or lack of proven commercial business models; lack of skills including on how to prepare projects; limited logistics, i.e. lack of infrastructure, logistics and supply chain partners makes delivery and supply of goods challenging and/or expensive; low customer demand – including lack of awareness, low rural purchasing power and expenditure; and inadequate regulation/policies and fiscal barriers, including high import costs and unfavourable tariff policies (BRILHO Business Case, 2016).

Some of the key findings gathered from programmes targeting innovation value chains (particularly in sectors such as agribusiness, health, energy, water and sanitation) in different East and Southern African countries have been summarised below:

Agribusiness:

- The Agribusiness Window programme has been supporting agribusinesses to realize innovations that help poor farmers in Tanzania. It has boosted agribusiness value chains via matching grants. Some of the gaps limiting innovation value chains include weak transport infrastructure, challenges in access to land, scarcity of technical skills – and most importantly, gaps in access to finance.

Health:

- The Private Sector Innovation Programme for Health has financed research and innovation to improve the for-profit health system in Kenya. In doing so, it has strengthened the commercial drug supply chain. One of its objectives was to study the gaps in the for-profit health market. Apart from lack of good market information, a major barrier was the ineffective government regulation in the sector.
- The Malawi Health Sector Programme has helped in testing and scaling up of successful innovations. It has assisted in creating demand for health services (to foster growth and innovation in the health sector). It has also targeted enhancements in drug supply chain. Innovations and progress in the sector are held back due to low access (demand) to health

services, low quality of health infrastructure, low number of doctors and nurses, and because of drug procurement bottlenecks.

Clean Energy:

- The BRILHO – Energy Africa project in Mozambique seeks to advance innovation and investment for the provision of off-grid energy and improved cook stoves. It nurtures early stage market work and seeding of innovation. It also assists in demand activation (especially in rural areas) and in facilitating research to fill in the evidence gap. Innovation in the sector has been inhibited by lack of government buy-in for the initiative, the weak business model of market actors, and the general underdevelopment of the market for off-grid energy services – especially among the rural poor.

Water Supply and Sanitation:

- The Rural Water Supply and Sanitation project in Tanzania has found innovative and cost-effective ways of service provision – which were also sustainable and more equitable. However, the financing gap continues to be a major barrier to innovation and further expansion of water and sanitation services, especially in rural areas.
- The Malawi Water and Sanitation Programme has fostered innovation in the sector by working with small NGOs and by testing different small-scale pilot ideas/innovations. The programme has helped the creation of many private spare parts suppliers in the supply chains of water supply commodities. Nevertheless, innovation and expansion of service provision in the sector continues to be limited by severe gaps in financing as well as geographic barriers (in remote rural communities).

However, it is important to note that there is a limited evidence base (e.g. academic studies) on innovation value chains in African countries. Further, few well documented programmes targeting innovation value chains exist in the region. The available (programme linked) literature also mainly details the ‘innovative’ nature of specific programmes and their ‘impacts’ – not so much about the gaps faced and/or to what extent the gaps reduced programme effectiveness. Owing to the scarcity of evidence, this rapid evidence review looks at different types of available relevant literature – including reports issued by different development agencies, NGOs, and some academic publications. (Liavoga et al., 2016).

The report is structured as follows. Section 2 briefly discusses the concept of innovation value chains, key development actors it involves, as well as the major gaps and challenges facing innovation in East and Southern Africa. Sections 3 and 4 present case studies of country programmes (from East Africa and Southern Africa, respectively) that support innovation value chains in different sectors. While discussing each programme, the report summarizes evidence on innovation, commercialization, value chains, inclusiveness, programme impact, gaps and challenges.

2. Innovation Value Chains and Key Gaps

Innovation Value Chains

The concept of **Innovation Value Chain** was introduced by Hansen and Birkinshaw (2007) and depicts innovation as a ‘chain of events’ – consisting of idea generation, development and implementation. The innovation value chain starts as a new knowledge – which is required by businesses to realize innovation. The new knowledge that is brought in by businesses is then transformed into products or services (and afterwards exploited) to intensify the business’s growth and the value provided to the consumers (Ganotakis and Love, 2012). The innovation value chain is at times a multifaceted process that requires the lowering of uncertainty via different phases within the value chain (Mohalajeng and Kroon, 2016; Bessant and Tidd, 2011).

Each actor in the **innovation value chain** (in the context of international development) has their own interests, which are interconnected but may or may not overlap with each other (USAID, 2017).

- **Policymakers and organisations** are especially interested in how innovation can be aimed at the right people, what the socio-economic impacts are, and who is the right intermediary to promote and scale it. This category includes ministries interested in supporting a policy or agenda, and donors such as DFID who operate with governments to accomplish their objectives (USAID, 2017.p76).
- **Implementing partners** can be non-profits, businesses and involve a high-level intermediary which is working to promote the innovation. They are accountable for strategy, product design. They differ in their place and role in the customer outreach process, and their goals may vary, including to boost revenue, offer better services to people, and how to access financing (USAID, 2017.p76).
- **Agents/distributors** are lower-level mediators. They comprise of those between the implementers and adopters / user. Within this group there are a range of actors, such as non-profits, healthcare networks, businesses, and distributors. They may include women entrepreneurs selling dried agriproducts or solar-powered lamps, or the agents managing mobile money payments (USAID, 2017.p76).
- **Users/adopters** are most concerned in how the innovation can improve their lives, what are the costs and benefits and risks associated, and who else is using it. These are the buyers of the final products or services (USAID, 2017.p76).

Key Gaps in Innovation Value Chain

Many African countries (including those in East and Southern Africa) lack the necessary systems and machinery that effectively and efficiently bring new ideas to the market.

Commercialisation is just one of the pathways through which technologies can be dispatched. The **gap between research and commercialisation needs to be reconciled** as a matter of practicality, for example, by offering incubation facilities that will promote the introduction of these new technologies to the market—a feature that is lacking in the region (Liavoga et al., 2016).

Functioning innovation system need to be conveyed, customized and integrated at national and regional levels (Liavoga et al., 2016.p43). Enhanced cooperation among stakeholders signifies a key component. A study in Kenya (Nyende et al. 2013) underlined the fractured nature of the

innovation system there, which impedes innovation. The **gaps and challenges were grouped into different factors, including; financial, human and physical, policy and processes, information and lack of incentives, and home-grown demand.** A further study in Rwanda and Kenya (Tigabou et al. 2015a, b) illustrated how the absence of a functioning innovation system in those countries had hindered the implementation of bio-digesters for the manufacturing of biogas. Ecuru (2011) examined the emerging innovation system in Uganda and detected several **gaps, including weak linkages between academia and industry** and a necessity to prioritize research and innovation activities in line with national goals.

To bring about food security, sustainable energy, and water supply and sanitation – governments in eastern (and southern) Africa will have to increase investment in innovation (e.g. around agricultural biosciences and health technologies). The region also requires models and initiatives that can narrow the gap between science and markets and lay the groundwork for fresh, productive investment both from the private and public sectors, as well as from donors and social impact investors (Liavoga et al., 2016).

While agricultural research organizations have concentrated on boosting agricultural production and productivity, non-governmental organizations (NGOs) and others concerned with agribusiness development have focused on marketing and innovation value chain development. **The overall impact of interventions in these two areas has been restricted in part by the absence of a more holistic approach that addresses challenges and opportunities all along the value chain,** from input suppliers and farmers' fields, through the different stages in the market chain, all the way up to the final consumers. Evaluation has also been commonly identified as an area that needs improving in complex interventions, such as those that encourage inclusive innovation and value chain development (Devaux et al., 2017).

In East and Southern Africa (and elsewhere in the region) there has been very minimal growth in the use of bioscience innovations—notwithstanding rapid recent advances in fields like plant biotechnology in parts of the continent. The **two on-going key difficulties are shortages in adequate funding from governments and of skilled expertise.** This is worsened by the minimal involvement of the private sector in research and innovation activities and the overall lack of supportive ecosystems to promote innovation processes at country level (Liavoga et al., 2016).

Fortunately, countries in the region have begun the process of developing a more enabling environment for innovation (e.g. in bioscience) and the required structures and policies are developing. In this light, it is important to add that there is no single, one-fits-all remedy for the development of knowledge-based innovation-economies. Nevertheless, there may be a range of possible pathways for countries to follow (Liavoga et al., 2016).

Involvements by donors and NGOs (e.g. such as Bio-Innovate – which operates in East African countries such as Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda) **provide product development support** that enable publicly-funded projects to move their respective technologies and products further along the innovation value chain with the active participation of the private sector and other delivery agents. Bio-Innovate has, for example, proved that innovative regional partnerships are feasible and can be productive if properly managed (Liavoga et al., 2016).

Nevertheless, donors (and policy makers) trying to support innovation scaling and transfer usually have low 'innovation proximity'. This means they have incomplete

capacity to influence the innovation transfer process. The implementing partners themselves probably do not have direct contact with the end user (customer/beneficiary), i.e. the stakeholder who are closest to the innovation. The implementing partners function through agents or distributors, on whom they depend on for services such as marketing and selling of the innovation. In addition, interventions focusing on the development and dissemination of innovation work are unlike other/typical projects, from donors' institutional viewpoints (USAID, 2017). This is because they face numerous gaps and challenges – such as:

- **Gaps and restrictions in exporting innovations.** International transfer further cuts innovation proximity and raises potential and risks within the innovation value chain for misalignment or inefficiencies. This is more severe in international transfer; implementing partners (IPs) may need local partners to circumvent the new environment, adapt the innovation, or setup relationships with communities (USAID, 2017.p27).
- **Limited direct control and roles by policymakers and donors.** Innovation proximity and place in the innovation value chain governs the roles and influence of different institutions. Each of the role can affect what happens down the chain, but the policy maker or donor has incomplete direct control (USAID, 2017.p27).
- **Level of adaptation (post-transfer) and related costs.** By nature of being innovative and coming from another context, it is normal for such projects to need some level of adaptation prior to adoption and scaling takes place (USAID, 2017.p27).
- **Necessity for data and feedback loops at all levels.** Monitoring Evaluation and Learning (ME&L) for innovation transfer activities must struggle with the specific difficulties of innovation transfer projects. The high level of adaptation and distributed decision-making structure generates challenges for gathering and sharing the data (of adequate quality and in a timely matter) on the basis of different stakeholders' needs and doing so in a cost-effective way (USAID, 2017.p27).

3. Evidence from Country Programmes in East Africa

3.1 Agribusiness Window: Tanzania

- Full title: Tanzania Agribusiness Window (TZAW)
- Value: £8 million
- Start Date: 2015 & End Date: 2022
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-201956/documents>

Description of Programme

Innovation: (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

The TZAW programme incentivises agribusinesses to bring forward and scale up their innovative investments that benefit poor farmers – in terms of their access to agricultural inputs or markets. The effect is sustained by catalysing investment and innovation in agribusiness and rural financial services which in turn results in systemic change in the markets for agricultural inputs and outputs. Supporting innovative ideas and reducing of project risks (e.g.

through financial and other forms of support) could help to reduce constraints faced by agribusinesses. Experience from the region suggests that innovation support can help incubate viable businesses in agribusiness and agricultural value chains able to attract private finance.

TZAW is a specialist window of the Africa Enterprise Challenge Fund (AECF). AECF is a \$244 million Challenge Fund capitalised by multilateral and bilateral donors to stimulate private sector **entrepreneurs in Africa to innovate and find profitable ways of improving access to markets and the way markets function for the poor, particularly in rural areas**. AECF awards grants and repayable grants to private sector companies to support innovative business **ideas in agriculture, agribusiness, renewable energy, adaptation to climate change and access to information and financial services**. Its purpose is to improve incomes of smallholder farmers and the rural poor.

Commercialisation: (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

Successful applicants receive grants and repayable grants up to a maximum of \$1 million to **catalyse private sector investment and contribute expertise to commercialise innovative projects in Tanzania**. By demonstrating that TZAW grantees are profitable investments, it is anticipated that entrepreneurs, private investors and banks will begin to see the agribusiness sector in Tanzania as profitable and an acceptable risk and therefore decide to increase their investment. At the same time, smallholder out-growers can create additional income, realise the benefits of commercial farming and over time will engage increasingly with the market system.

Value chain: (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

Experience from the region indicates that innovation support can help reproduce viable businesses in agribusiness and agricultural value chains capable of attracting private finance. TZAW attains this outcome by supplying matching grants for business projects in agribusiness, **agribusiness value chains and financial services in Tanzania that include the poor as employees, contract farmers, out-growers and/or suppliers**. The programme will provide on-farm and off-farm employment opportunities in the value chain linking farms to final markets, and benefits to the poorest farmers, women and youth.

Inclusiveness: (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

The TZAW programme is likely to lead to lowering gender inequality because it targets women entrepreneurs and women owned businesses. The marketing material has been amended to encourage applications from women entrepreneurs.

Responsible Agencies (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

- **Accountable:** Department for International Development
- **Funding:** Department for International Development
- **Implementing:** Alliance for a Green Revolution in Africa, Alliance for a Green Revolution in Africa, Africa Enterprise Challenge Fund (AECF)

Implementation and Impact Evaluation (TZAW Annual Review, 2018)

The intermediate annual review (from 2018) has given TZAW an overall a score of 'A' (i.e. that it meets expectations). The output indicator on 'innovation' surpassed the target for number of projects while output indicator on 'development impact' was in line with the target. The performance against outputs is mixed, mainly due to difficulties caused by the current business environment in Tanzania. The programme has outperformed the target for 'profitability' but is substantially below target for 'repayments'. Disbursements also continue to fall significantly short of targets, mainly due to project delays and difficulties raising matching funds.

Gaps and Challenges (TZAW Business Case, 2015 & TZAW Annual Review, 2018)

The following general constraints (i.e. resource gaps and costs) are holding back the success of TZAW (and agribusiness growth in general):

- **Gaps in transport and infrastructure:** Cargo dwell time at the Dar es Salaam port is exorbitant, rail freight volume has decreased, and road travel delays can add 30% to costs along the Central Corridor. Urban congestion is rising with proportionately higher costs of moving people and goods around major conurbations and into the interior. Inefficient and costly energy and using backup generators contribute substantially to the cost of production.
- **Challenges in access to land:** Tanzania has a huge amount of underused land, but only a small percentage is available to new and growth-oriented farmers. The availability of unrestricted land and the rising costs of transferring land are limits to the growth of business. Businesses in urban areas cannot easily find land and premises and acquiring rights to farmland is an exhausting process. Tanzanian law does not directly allow foreign investors to hold title to land.
- **Gaps in skill:** There is a considerable skills gap in Tanzania across many sectors. Employer confidence in the quality of graduates from vocational and technical colleges is low.
- **Gaps in financing:** Access to finance is generally regarded as the main binding limitation across all sectors, especially among small companies planning to expand. The smallest firms and commercial smallholders use micro-finance institutions, village community banks, trade credit and mobile banking. A specific gap exists for the financing of fast-growing firms which have started up recently, do not have a long track record of successful borrowing and loan repayment and which require extra facilities to finance their growth. The accessibility of second stage growth finance (further than the concept proving stage) is rare in Tanzania. The lack of access to commercial loans is largely due to both supply and demand constraints. On the supply side, commercial banks are not broadening credit to small firms due to high transaction costs and the absence of an effective and proven credit reference system. To make up, interest rates are far too high for a growing small business. On the demand side, many owners are not banked. Financial inclusion is restricted in Tanzania with only 8.4% of households having a bank account. Lack of financial skills, general education and access to information restrict the demand for banking services.
- **Gaps in Foreign investment (FDI).** FDI has supplemented domestic capital, skills and technology, even though agriculture recorded the lowest increase in FDI in recent years. New FDI is required especially for the agriculture supply chain to increase productivity and to produce larger surpluses for processing and export.

3.2 Private Sector Innovation Programme for Health (PSP4H): Kenya

- Full title: Private Sector Innovation Programme for Health (PSP4H)
- Programme Value: £4.8 million
- Start Date: 2012 & End Date: 2018
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-202551/documents>

Description of Programme

***Innovation:** (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)*

DFID supported action-research (and innovation) using a market systems approach to improve the for-profit health market in Kenya, so that poor people get better value for the money they spend on health. This project is an innovation in the health sector and a departure for specialists in market systems. The low-quality and expensive healthcare which poor people get from for-profit service providers, and medicine shops could be enhanced not just by better regulation and accreditation (both of which are being backed by donors, including DFID) but also by taking action in the market itself. Such changes would offer not just better health but, possibly, save some of the money poor people actually spend on inappropriate treatment. DFID makes investment in social franchising, by which international NGOs hire for-profit providers into a franchise, branding their clinics and supporting them with training, subsidised supplies and marketing.

***Commercialisation:** (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)*

By examining interventions such as improving the commercial drug supply chain, increasing the supply of competent health workers in areas of need, and improving the quality of for-profit providers, the project describes how the health market and its supporting system can best be backed in the future to enhance poor people's health. As a consequence, development partners are able to fully understand the role of the for-profit market in the overall health system; and learn how to enable pro-poor changes by manufacturers, distributors, shop-keepers, nurses and clinical officers running clinics, and also generate interest among investors looking to extend for-profit networks which serve the poor.

***Value chain:** (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)*

The programme helps to strengthen the commercial drug supply chain. The human medicine market in Kenya measures up poorly, with dozens of similar products, and distributors and wholesalers competing almost exclusively on price and none of them able to build market share or pay for detailing to chemist shops. The commercial drug supply chain in Kenya is allegedly worse than some of its neighbouring countries.

***Inclusiveness:** (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)*

Some of the analysis (conducted by the research work of the programme) include how the proportions of household health expenditure on self-medication, treatment by qualified for-profit providers, etc. vary by gender (and other personal attributes) of the sick person.

Responsible Agencies (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)

- **Accountable:** Department for International Development
- **Funding:** Department for International Development
- **Implementing:** Oxford Policy Management, Cardno Emerging Markets

Implementation and Impact Evaluation (PSP4H Annual Review, 2018)

Because this project is primarily an innovation and learning project, there is shortage of well-defined estimates of the benefits (i.e. in economic terms). The knowledge, evidence and experience identified during implementation is expected to provide a national and international public good, dealing with the gaps in understanding of the poor's engagement in the private health market in Kenya and, more generally, the relevance to health of a market systems approach. Some of the achievements include:

- Six research reports were generated and disseminated in 2015 and 82% of stakeholders were conscious of these reports and findings by 2016.
- Production and dissemination of over 60 reports and broadened the reports to include policy briefs, case studies and implementation notes. Those include papers examining the labour market and drug supply chain in Kenya and case studies discussing the key interventions, such as City Eye Hospital, Labnet etc.
- Understanding of drivers of overall for-profit health market and that used by the poor gained from pilot initiatives.
- New knowledge and experience distributed in ways most suitable to learning by the target audience. The programme expanded engagement with various players and drafted key messages which were customized for specific audiences such as development partners, including DFID in London, the Kenya Health Federation and the public sector.
- Generally speaking, the programme has accomplished its outcome on learning lessons of how a market systems approach could benefit pro-poor health interventions. The programme has delivered against all targets—while surpassing targets on outcome indicators on dissemination of lessons among policy makers, development partners and wider stakeholders.

Gaps and Challenges (PSP4H Business Case, 2012 & PSP4H Annual Review, 2018)

The programme has contributed in examining the key gaps in the Kenyan health sector and in pinpointing 'agents of change', players in the market who are exasperated by constraints and who want to push for change to enhance their business and improve value-for-money for the poor.

Previous to the design of PSP4H, there was almost no recorded research on health market systems in Kenya, and on efficient ways of intervening in the for-profit health sector to benefit poor people. One of the main challenges is that in Kenya, as in other developing countries, the regulation is ineffective. It keeps failing in particular to cover the healthcare transactions that poor people have with for-profit providers.

3.3 Rural Water Supply and Sanitation Project: Tanzania

- Full title: Rural Water Supply and Sanitation (RWSS)
- Programme Value: £30 million
- Start Date: 2012 & End Date: 2016
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-202852/documents>

Description of Programme

Innovation: (RWSS Business Case, 2012 & RWSS Annual Review, 2015)

The project has also worked with local governments, NGOs and civil society organisations to identify **innovative ways** (e.g. through water point mapping) **to improve equity and sustainability in the provision of rural water supply and sanitation in Tanzania**. The programme provided training to local councillors, who are key decision makers at the village level, to help them play a role in creating effective Community Owned Water User Associations (COWUAs). WaterAid (i.e. partner NGO) has made sure that unit costs stay as low as possible and thus the programme maximises the number of poor people it reaches. To do this WaterAid has tracked costs at the delivery level and conducted research to identify **innovative low-cost approaches and new technologies** that can be scaled up for use at the national level.

Commercialisation: (RWSS Business Case, 2012 & RWSS Annual Review, 2015)

Urban water sector utilities were able to **operate commercially** and were able to enter into treaties with donors for capital investments in a way that is not feasible for local government authorities. Working with utilities also enabled donors to wield direct control over finances and account for results easily. Absence of a reliable water supply means that people spend a **large proportion of their income** getting enough water to drink – and walk for long distances to get clean water. It unfairly targets women as they are the ones who are responsible for collecting water; some women and girls walk up to 5 hours to fetch one bucket of water.

Value chain: (RWSS Business Case, 2012 & RWSS Annual Review, 2018)

The project completion review noted that Water Aid should refocus its role on boosting Pit Emptying (PE) service provision in urban areas (considering the Gulper as one **possible technology** amongst a wider range of options) and possibly involving the participation of **different players along the sanitation chain of services** – along with exploring corresponding financial, partnerships, transport and business models.

Inclusiveness: (RWSS Business Case, 2012 & RWSS Annual Review, 2015)

Interventions to improve water supply, sanitation and hygiene have a significant impact on health and economic development. The social and economic effects include higher productivity (especially for women), better health as a consequence of reduced diarrhoea diseases and intestinal infection, and reduced healthcare costs.

Responsible Agencies (RWSS Business Case, 2012 & RWSS Annual Review, 2015)

- Accountable: Department for International Development
- Funding: Department for International Development
- Implementing: Harewelle International Limited, DAI Europe, WaterAid, Ministry of Finance – Tanzania, Harewelle International Limited

Implementation and Impact Evaluation (RWSS Annual Review, 2015)

Generally, the programme outcome is scoredn 'B' (i.e. outcome moderately did not meet expectations). That's because, while there was good progress on access to enhanced water in rural areas, there was; (a) Limited sustained behaviour change on use of expanded sanitation and adoption of better hygienic practices – and (b) Low levels of functionality of rural water points, as about 40% of rural water points are stated not functioning (i.e. not providing water). Low levels of functionality together with a 3 % population growth per annum in rural areas, led to a marginal rise in population with improved water sources.

Gaps and Challenges (RWSS Business Case, 2012 & RWSS Annual Review, 2015)

In general, there is also a considerable financing gap for water and sanitation in Tanzania (and other countries in the region). There is a funding gap for both the urban and the rural subsectors. The largest gap is in the rural sector, which only has 28% of the required funding (as opposed to the urban sector which has 50%) to reach Tanzania's targets on water and sanitation. In addition to the lack of financing, the rural sector obtains limited technical assistance as compared to the urban sector.

4. Evidence from Country Programmes in Southern Africa

4.1 Health Sector Support (HSSP) Programme: Malawi

- Full title: Malawi Health Sector Programme (HSSP)
- Programme Value: £109.9 million
- Start Date: 2012 & End Date: 2019
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-202214/documents>

Description of Programme

Innovation: (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

The project has offered technical and considerable demand creation support to Malawi. These encompass local planning, management, quality assurance, testing innovations and scaling up effective approaches. It also included funding for upgrading and equipping of existing health facilities and ensuring basic requirements for safe healthcare provision (water, sanitation, and energy).

Commercialisation: (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

Malawi's health sector will continue to be reliant on international support for some years. Nevertheless, there will likely be some rise in reliance on domestically generated resources over the HSSP as a move towards greater financial sustainability.

Value chain: (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

The project helps to reduce health risks from stock-outs in the period until the reformed Central Medical Stores (CMS) proves the capacity to meaningfully **improve performance in procurement and drug supply chain management**, as well as protecting DFID Malawi from risks of poor procurement practice.

Malawi suffers from weak supply chain management that results in seepages during distribution. The project has supported the Ministry of Health (MOH) in implementing an annual Procurement Management Improvement Action Plan (PMIAP) that was planned to address weaknesses in health sector procurement and supply chain in a systematic way.

Inclusiveness: (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

The project and the new Health Sector Strategic Plan (HSSP) for Malawi helped to organise and enhance the country's health systems and – thus – led towards reduced gender inequalities and empowered women and children, i.e. the groups most affected by climate change.

Responsible Agencies (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

- Accountable: Department for International Development
- Funding: Department for International Development
- Implementing: United States Agency for International Development (USAID), Imperial Health Sciences, Oxford Policy Management, Options Consultancy Services, Mott MacDonald Limited, AECOM, United Nations Children's Fund (UNICEF), Deloitte, Charles Kendall Group, Ministry of Health - Malawi, Ministry of Finance - Malawi

Implementation and Impact Evaluation (HSSP Annual Review, 2018)

An intermediate evaluation (HSSP annual review, 2018) gave the project an 'A' score, i.e. that it met overall expectation. Strong progress was made in expanding access to quality health services, with targets for childhood malaria treatment, immunisation, cholera treatment and nutrition services met or surpassed. The use of community health systems and expansion of free health services for approximately 3.4 million Malawians (through the Christian Health Association of Malawi (CHAM) health facilities) made a significant contribution to the achievement of the results.

Progress on consolidation of the performance of the underlying health system was mixed. The readiness of designated health facilities to deliver lifesaving emergency maternal health services upgraded but continued to underachieve against set targets. Obtainability of medicines somewhat lowered over the review period – with bigger stockouts for maternal and new-born tracer drugs. Some victory however was achieved in lowering the use of parallel systems for distribution, with nutrition commodities integrated into the Government of Malawi

(GoM) managed distribution system. Progress has been made in enhancing appropriate and secure storage of medicines with pharmacy–via innovative box storage units installed in 93 health facilities.

Gaps and Challenges (HSSP Business Case, 2012 & HSSP Annual Review, 2018)

In Malawi, there are serious health system gaps and delivery challenges – including continuing serious shortages of qualified health personnel.

- **Gaps in access to services:** 19% of the population in Malawi live outside an 8 km radius of a public health facility; nevertheless, this is variable across the 28 districts with 43% of the districts beyond the average ranging from 20–100% outside the 8 km radius. (HSSP Business case, 2012.p9)
- **Gaps in quality of health infrastructure and services:** only 23% of facilities have basic infrastructure, 98% of health centres cannot qualify as providing basic emergency obstetric care and report a death rate for maternity care of 3.4%, three times the UN's recommended level. (HSSP Business case, 2012.p9)
- **Gaps in the availability (number) of nurses and doctors:** Though the Emergency Human Resource programme resulted in a 53% surge in health workers, Malawi still has a low health worker to population ratio (HSSP Business case, 2012.p9)
- **Gaps in distribution:** Drugs procurement and distribution is managed by a parastatal, CMS which runs a revolving fund. It is currently dysfunctional and for the first 18 months of HSSP, DFID (and other partners) have procured and distributed essential drugs and supported the CMS reform programme (HSSP Business case, 2012.p9)

4.2 BRILHO - Energy Africa: Mozambique

- Full title: BRILHO – Energy Africa Mozambique
- Programme Value: £23.6 million
- Start Date: 2016 & End Date: 2024
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-204837/documents>

Description of Programme

***Innovation:** (BRILHO Business Case, 2016)*

The project aims to increase energy access (to households and businesses) via private sector **innovation**, investment, government support, supply of dispersed off-grid energy solutions and enhanced cook stoves.

BRILHO will have the following key complementary components:

- **Market Development Fund (MDF):** start-up grants will be accessible to new businesses, **seeding innovation and supporting early stage market work**. Working capital loans will help incumbent and emerging firms to access the capital they need to grow to entice commercial debt. Financial support is supplemented by technical assistance for: legal and

technical advice; collecting market information; matchmaking with local supply chain partners; and helping to refine technology and business models that meet Mozambique's needs.

- **Demand Activation:** Engagement with rural consumers will inform them on the benefits of modern energy solutions, and also about mobile money and pay as you go (PAYG) payment mechanisms, yet at the same time introducing private sector suppliers.
- **Research and Dissemination:** Research will fill gaps in the evidence base, especially with regard adaptation of successful and emerging regional (especially East African) business models and experience appropriate to the Mozambican context.

Commercialisation: (BRILHO Business Case, 2016)

The Market Development Fund of the programme will deliver **financing for start-up and early commercialisation of ideas** – such as through a partial match funded grant or loan, or a credit facility.

Value chain: (BRILHO Business Case, 2016)

The **improved cook stoves** component would use the Mozambican Biomass Energy Strategy (BEST) as reference and **support the production and distribution chain** – instead of directly subsidising product prices. The approach would comprise of marketing products, improving access to finance, producing locally, introducing new technologies and creating assembly facilities for imported stoves that conform with international standards. The project has partnered with numerous NGOs and SMEs that are active in **stove production, distribution and promotion**.

Inclusiveness: (BRILHO Business Case, 2016)

Clean cook stoves have **positive health outcomes for both women and children** because of their ability to considerably lower smoke inhalation through their use. Clean cook stoves can be considerably beneficial to women and children since they spend more time at home and therefore have greater exposure to the smoke. Better access to energy for lighting also offers potential to use evenings more productively, e.g. for activities such as education, study or work.

Furthermore, the production and sale of clean energy products can generate job opportunities. Women are the main household energy managers in many developing countries. Close to their customers, **women entrepreneurs have a huge potential to generate distribution and servicing networks in rural areas – thereby reducing customer acquisition costs and credit repayment risks**.

Responsible Agencies (BRILHO Business Case, 2016)

- Accountable: Department for International Development
- Funding: Department for International Development
- Implementing: SouthSouthNorth, SNV Netherlands Development Organisation, DAI Europe

Implementation and Impact Evaluation (BRILHO Business Case, 2016)

No proper programme reviews are available so far. However, the expected outcome of BRILHO (as stated in the business case, 2016) will be greater energy access through innovative private sector provision of, and investment in, off-grid renewables. Aided by the programme, an improved local energy market is expected to lead to the following (estimated) targets:

- A million people benefitting from an improved cook stoves (ICS).
- A million people profiting from solar home systems (SHS) or mini grids for domestic use.
- 20,000 additional businesses supplied with off-grid renewable productive energy.
- Mobilisation of an additional private funding (worth £30 million) for BRILHO interventions.

Gaps and Challenges (BRILHO Business Case, 2016)

Key gaps and challenges to the programmes (and the off-grid energy sector in Mozambique at large) include: (a) resistance of the Government of Mozambique (GoM) to private sector delivery of off-grid energy; (b) few businesses able to exploit market opportunities in Mozambique combined with a deteriorating economic situation; (c) inability of rural poor and businesses to pay for off-grid energy products and services; and (d) rural mobile money and other secondary supply chain activities do not develop sufficiently to allow automated PAYG models to be used.

To curb some of the gaps, the programme will provide prospective investors with a comprehensive package of financial, technical, research and policy support to develop Mozambique's renewable energy market and related services. This approach will identify and implement innovative, sustainable and inexpensive solutions that help build the productivity and resilience of the country's rural poor.

4.3 Water and Sanitation Programme: Malawi

- Full title: Malawi Water and Sanitation Programme (MWSP)
- Programme Value: £19.5 million
- Start Date: 2011 & End Date: 2016
- DevTracker link to business case: <https://devtracker.dfid.gov.uk/projects/GB-1-202944/documents>

Description of Programme

Innovation: (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

The programme backed the delivery of rural water, sanitation and hygiene services in Malawi—culminating in an estimated 850,000 beneficiaries (of which 442,500 are women) having access to enhanced water and sanitation facilities and 1 million people (of which 510,000 are women) implementing key hygiene practices.

The programme ran '**Pilot Small Scale Innovations**' in the water and sanitation (WASH) Sector with a Challenge Fund. This thematic area made sure that the challenges that are faced by the WASH sector are being resolved through **innovative means** that are verified by small NGOs. The challenge fund offered a window for small scale NGOs who are providing innovations in the

sector **to access funding to scale up or roll out existing or test new innovations** in the least served districts.

Commercialisation: (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

The use of competition to select the NGOs to avail the water and sanitation services **ensured that commercial advantage is attained through competition**. The benefactor communities will mobilise cash for the future operation and maintenance of the facilities. Nevertheless, doing so has always been a challenge.

Value chain: (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

It is estimated that there were **100 private spare parts supply chains for water supply commodities established in 10 districts**, as a result of the project. Private contractors have also been involved where appropriate, by implementing partners. The programme has made sure that preventive and breakdown maintenance crews are private operators who are paid by beneficiary communities for the services provided. In this manner, the project aimed at reducing 'down time' to under two days.

Inclusiveness: (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

The project has solidified rural WASH institutions, directed by rights based, **gender sensitive** and equity focused policies and strategies, to plan, manage, implement and monitor WASH activities.

Responsible Agencies (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

- Accountable: Department for International Development
- Funding: Department for International Development
- Implementing: Harewelle International Limited, WaterAid, United Purpose, United Nations Children's Fund (UNICEF), Harewelle International Limited

Implementation and Impact Evaluation (MWSP Annual Review, 2014)

Notwithstanding the delays in the implementation of the water supply element of the programme (which is being managed by UNICEF), all boreholes have been located and evaluated for rehabilitation or re-drilling—while new boreholes have been prepped for implementation by NGOs (according to an intermediate / annual project review from 2014). The project had also experienced an enthusiastic response from communities willing to develop and join Village Savings Loans (VSLs) groups dubbed Bank Pa Mjigo. The VSLs are used by the communities for the mobilisation of funds for the maintenance of their water points. Further, the WaterAid Policy and Governance Component had engaged national and district level cooperation meetings that had seen enhanced sector coordination—at all levels. The Citizen Action Initiative had built the ability of the communities to partake with duty bearers to request for services that need to be provided to the communities.

Gaps and Challenges (MWSP Business Case, 2011 & MWSP Annual Review, 2014)

Funding gap: in addition to the general deficiency in funding for the water sector in Malawi, the available funding tends to go for big projects which do not always build the district

capacity as intended. Yet still, much less funding has been provided for sanitation and hygiene objectives – since sanitation and hygiene issues are widely neglected.

Geographic gap: certain geographic areas have seen little investment (due to remoteness or even politics). Despite significant efforts to develop rural infrastructure, the **gap between urban and rural services** remains a distinctive feature of the sector. Only 23% of those in rural areas live without an improved drinking water source and 11% of the rural population practices open defecation (MWSP Annual Review, 2014.p3).

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