

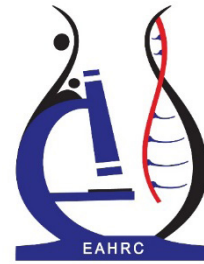
EAST AFRICAN HEALTH RESEARCH COMMISSION



Innovative Domestic Financing for Health Research in the East African Community:

A baseline assessment and road map towards a sustainable health research and development





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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical and Research Foundation
ARV	Anti-Retro Viral
CSR	Corporate Social Responsibility
DIB	Development Impact Bond
EAC	East African Community
EAHRC	East African Health Research Commission
EAHRF	East Africa Health Research Fund
EAC/PS	East African Community Partner States
HRO	Health Research Organisation
KEMRI	Kenya Medical Research Institute
KII	Key Informant Interview
KSH	Kenyan Shilling
M & E	Monitoring and Evaluation
NACOSTI	National Commission for Science, Technology and Innovation
NFP	National Focal Point of EAHRC
NIMR	National Institute for Medical Research
NGO	Non-Government Organisation
OHRO	Other Health Research Organisation
PHRO	Prime Health Research Organisation
R&D	Research and Development
SIB	Social Impact Bond
SSP	South Sudanese Pound
TSH	Tanzanian Shilling
UGX	Ugandan Shilling
USD	United States Dollar
WHO	World Health Organisation

Definitions

10/90 Gap: A health research terminology used with reference to the current global funding for research where 10% is spent on diseases that afflict more than 90% of the population [1].

Bamako Call to Action: The Bamako Call to Action was launched at the Global Ministerial Forum on Research for Health held in Bamako, Mali from 17-19 November 2008, urging governments to allocate at least 2% of health ministry budgets to research, and urged international development agencies to invest at least 5% of development assistance funds earmarked for the health sector to research [2].

Community: Refers to the East African Community.

Disease Burden: This is the impact of a health problem measured by financial cost, mortality, morbidity, or other indicators. Disease burden is measured by the disability-adjusted-life-year (DALY), a time-based measure that combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health, as used by the WHO Global Burden of Disease [3].

Domestic Sources of Financing: Domestic sources of financing consist of transfers from government domestic revenue, other domestic revenues, from households, corporations and domestic revenues from non-profit institutions as defined in the WHO Global Health Expenditure Database (2017) [4].

External Sources of Financing: External sources of financing consist of transfers distributed by government from a foreign origin, revenues from non-profit institutions of foreign origin and direct foreign transfers as defined in the WHO Global Health Expenditure Database (2017) [4].

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [5].

Health Research: Health research, refers to research carried out to learn more about human health. Health research also aims to find better ways to prevent and treat disease [6].

Sin Tax: A tax levied on products or services that are socially costly, thus adding to their price and contributing to state revenue. These types of taxes are levied by governments to discourage individuals from partaking in such activities without making the use of the products illegal [7].

Executive Summary

The East African Health Research Commission (EAHRC) is an institution of the East African Community (EAC) with the mandate to advise on all health matters, health-related research and findings necessary for knowledge generation, technological development, policy formulation and practices. It is the principal advisory institution to the EAC on Health Research and Development (R&D). The objectives of the EAHRC Strategic Plan 2016-2021 include mobilisation of resources to support health research for the development of the EAC/PS. There was, therefore, a need to establish a clear baseline as well as conduct a needs assessment survey to identify the current and potential domestic sources of funding, and their utilisation for health research.

Access to adequate resources is a pre-requisite for strengthening health research within the Community. As a developing region, the Community is affected by the realities of the '10/90 Gap' in health research denoting current global trends in funding research where 10% is spent of diseases that afflict more than 90% of the population. Resource constraints pose significant challenges to the health research initiatives in the EAC/PS. Such a situation leads to sustainability concerns, particularly given the high disease burden and development challenges of the EAC/PS. Thus, the development of a well-thought-out strategy for increasing domestic financing in health research and its implementation is imperative.

This baseline assessment was commissioned to collect data on the financing requirements, current sources of financing as well as to develop the strategies and an implementation plan to increase the domestic sources of financing for health research.

Quantitative and qualitative questionnaires were circulated among the stakeholders including the organisations involved in research in both governmental and non-governmental sectors in the EAC/PS. Key informant interviews were carried out and desk reviews conducted to gather additional data and insights. This study was conducted using a three-pronged approach: (i) desk review of secondary data, (ii) administration of a questionnaire to collect quantitative data from health R&D organizations and ministries of the five EAC Partner States and, (iii) key informant interviews and a validation workshop of the stakeholders. The study used 2014-2015 as the baseline year.

The total amount of health research financing required for EAC as a region in 2014/15, stood at USD 496.88 million and, the total health research financing generated was USD 301.71 million. The total health research financing was less than the minimum level of financing required by USD 195.17 million or 39.28%. The ratio of total health research financing to the total GDP of EAC/PS stood at 0.21%

The total health research financing of EAC as a region was USD 301.71 million out of which only USD 43.62 million or 14.5% was generated from domestic sources. The balance amount of USD 258.08 million (85.5%) is financed from the external sources. Further, there is a financing gap of USD 195.13 million compared to the total financing requirement of USD 496.88 million. The total health research financing as a percentage of the total GDP

of EAC stands at 0.21%, and the total domestic financing for health research as a percentage of GDP is low at 0.028%.

The low-levels of domestic financing have implications for the sustainability and the development agenda of EAC/PS, as it implies that the health research agenda is highly dependent on external sources of financing.

Burundi: The minimum financing required for health research by Burundi in 2014/15 was USD 7.95 million whereas the amount of financing realised was USD 1.79 million. There was a financing gap of USD 6.16 million or 77.5%. Of the financing received, USD 1.739 million or 96.5% was externally sourced, while the domestic sources accounted for only 3.5%. Health research financing as a percentage of GDP stood at 0.06%.

Burundi has not established a health research policy. Although the National Policy on Scientific Research and Technological Innovation 2014-2018 provides a broad outline, the health research priorities are not defined.

Kenya: The minimum health research financing required by Kenya in 2014/15 was USD 250 million against a value of USD 149 million in actual finances generated, of which USD 25 million (16.54%) was generated from the domestic sources. External sources accounted for USD 124 million or 83.46%. The health research financing as a percentage of GDP stood at 0.23%.

Kenya has pioneered the establishment of a legal framework for resource allocation for health research by the government. The Health Act 21 of 2017 stipulates that not less than 30% of the National Research Fund be allocated to health research.

Rwanda: The minimum health research financing required by Rwanda in 2014/15 stood at USD 25 million, with USD 6 million being the actual amount generated. There was a financing gap of USD 19 million (76%). The share of domestic resources to the total financing received was only USD 0.08 million or 1.3%. At USD 5.9 million or 98.7%, Rwanda is nearly entirely dependent on external financing for health research. The health research financing as a percentage of GDP of Rwanda stood at 0.07%.

Tanzania: The minimum health research financing required for Tanzania in 2014/15 stood at USD 77 million. Based on the data received, the total financing generated was USD 40 million. The assessment shows a financing gap of USD 37 million or 48.6%. Of the total financing, USD 7.7 million or 19.5% was generated from the domestic sources and the balance of USD 31.9 million (or 80.5%) attributed to external sources. The share of health research financing as a percentage of GDP stood at 0.09%. Tanzania has established a health research policy and defined the health research priorities.

Uganda: The minimum health research financing required for Uganda in 2014/15 stood at USD 136.5 million against which a total of USD 105.8 million was generated. USD 94.6 million (89.43%) was raised from external sources and only USD 11 million (10.48%) from domestic sources. Health research financing as a percentage of GDP stood at 0.39%.

After consultations and validations by health financing experts from partner states, the following strategies were proposed:

- i. Establish laws that specify that at least 30% of R&D budget of the government be allocated to health research in EAC/PS.

To meet the region's financing obligation of USD 496.88 million, at least 1.25% of GDP should be earmarked annually for R&D by the EAC/PS, with 30% of the R&D budget being allocated to health research. However, given that the R&D investments currently fall between 0.1% and 0.8%, the EAC/PS may implement the recommendations over the next five years.

- ii. Earmark 10% of the Sin Taxes collected by each of the EAC/PS for health research. Given that the EAC/PS collect more than USD 687 million in Sin Taxes annually, USD 69 million of it could be allocated for health research. The critical need for financing health research and the fact that Sin Taxes have a direct linkage to health provides a compelling rationale for allocating a part of the Sin Taxes to health research.
- iii. Set up an East Africa Health Research Fund with an annual financing capacity of USD 20 million. The fund would be designed be along the lines of Health Product Research and Development Fund of the WHO and would enable the research organisations in the EAC/PS undertake large research projects. The EAC/PS will initially contribute to the corpus of the fund. Thereafter, finances will be raised through a combination of the budget allocation by EAC/PS, donations by individuals and institutions and through the issuance of health research bonds in the form of Development Investment Bonds.
- iv. Mobilise 1% of the inward remittances of the USD 3.4 billion from diaspora citizens of EAC/PS into health research by offering bond programmes and encouraging donations.

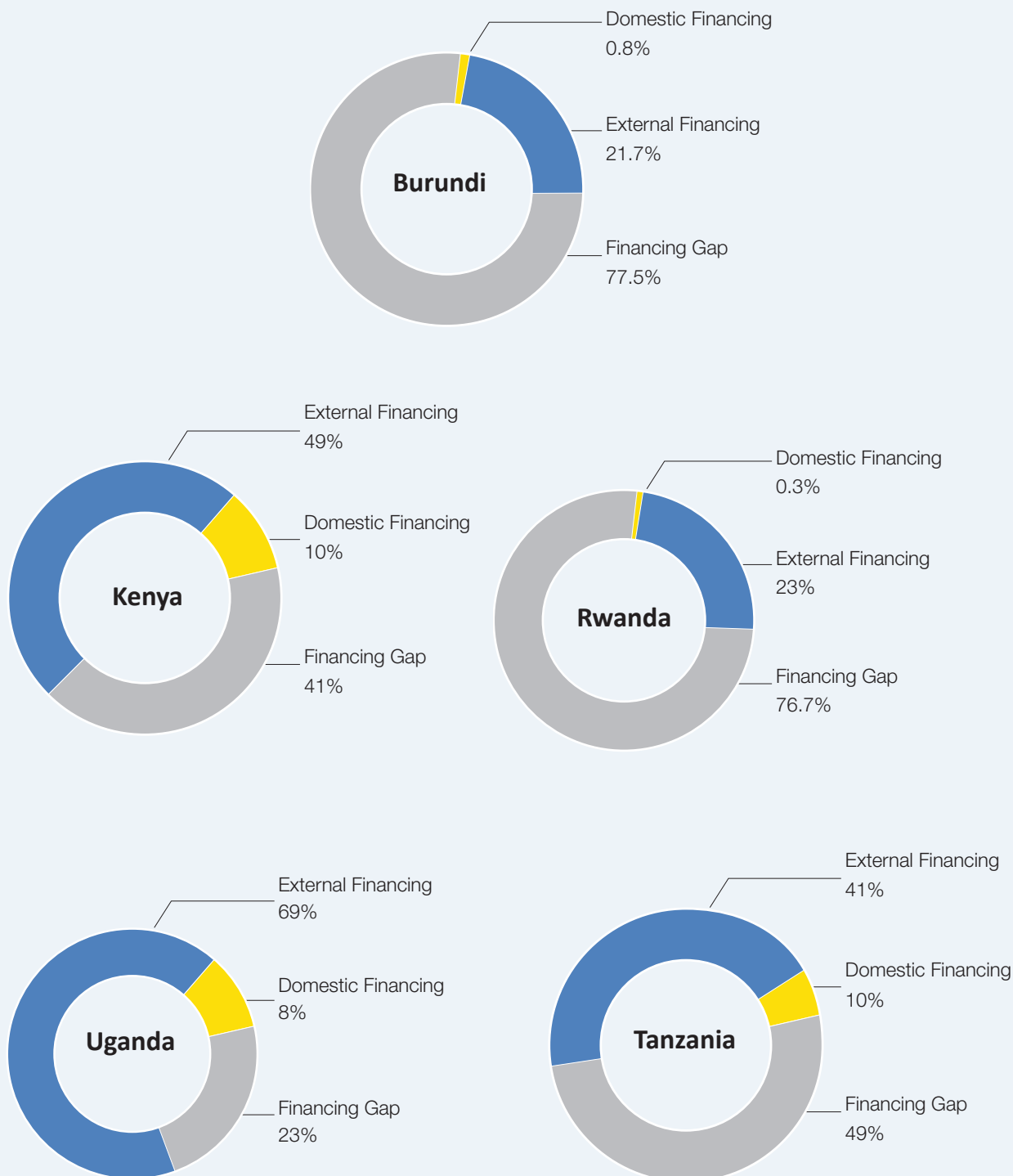
Such initiatives would generate USD 34 million annually. In order to mobilise resources through this channel, the EAC/PS will need to network with the citizens in the diaspora with well-articulated health research programs that clearly demonstrate their development impacts.

- v. Fundraise by embedding health research into Corporate Social Responsibility (CSR) initiatives of the private sector in the EAC/PS to direct 5% of CSR funding to health research. In order to mobilise financing through CSR initiatives, the research institutions in each EAC/PS will need to develop compelling health research concepts that are appealing to the potential sponsors of CSR programs. The EAHRC may offer capacity building support for such initiatives conducted by the research organisations in the EAC/PS.
- vi. Increase health research financing through education and scholarships. The postgraduate students and PhD scholars numbering over 2,000 in the academic institutions across the EAC/PS have the potential to generate USD 10 million annually for health research. The EAHRC may support academic institutions and promote health research as a viable career option through platforms such as the East African Health Research Journal and through workshops to build the capacity for offering programmes with significant health research content.

While establishing laws that will allocate 30% of the government's R&D budget to health research will pave way for a sustainable health research financing in EAC/PS in the long term, the other recommendations will lead to increased domestic financing by USD 135 million in the short and medium term (i.e. with the next five years) and thereby increasing the domestic financing of health research from 8.6% to 35% of the financing requirements.

The Status of Financing Health Research in East Africa

The following charts provide the summary of findings of the Baseline Assessment and Mapping Sources for Domestic Financing for Health Research for each of the EAC/PSn.



1. Introduction

The East African Health Research Commission (EAHRC) is an institution of the East African Community (EAC) established by the 5th Extra-Ordinary Summit of the EAC Heads of State in June 2007. The EAHRC is a mechanism for availing to EAC advice on all matters of health and health-related research and findings necessary for knowledge generation, technological development, policy formulation, practices and related matters.

The strategic objectives of the EAHRC Strategic Plan 2016-2021 include mobilisation of resources to support health research for development in the EAC/PS and the region. In this respect, there was a need to establish a clear baseline, conduct a needs assessment to identify the current and potential domestic sources of financing, and their utilisation for health research.

Accordingly, EAHRC commissioned a baseline assessment and mapping sources of domestic financing for health research in the EAC/PS.

1.1 Objectives

The objectives of the baseline assessment were:

- i. To provide well-analysed data, a needs assessment report and recommendations on domestic financing mechanisms for health research at national and regional levels.
- ii. To demonstrate an investment case for domestic financing for health research in EAC/PS that demonstrates value for money and return on investment.

In line with the objectives, the baseline assessment mapping exercise was to provide the following details:

- i. Information on the current level of health research financing (compared to health financing in general and Gross National Income).
- ii. Information on the sources of financing for health research in the EAC/PS, and the proportion of financing that is from domestic sources in the EAC/PS.
- iii. Recommendations for policy, strategies and practical options for increasing domestic financing for health research in EAC/PS.
- iv. M&E framework to monitor the progress of the EAC/PS in implementing the domestic financing strategy for health research.
- v. Establish a database on health research financing in EAC/PS.
- vi. Guide investments by EAC/PS in health research.
- vii. Recommend priority interventions for domestic financing for health research in the region.
- viii. Establish benchmark indicators for monitoring and evaluating the impact of the implementation of the proposed strategies.

1.2 Context of the Study

Access to adequate financial resources is a pre-requisite for strengthening health research in EAC/PS. As in other developing regions in the world, EAC/PS is also affected by the 10/90 gap, where 10% of the current global research funds are spent on diseases that afflict more than 90% of the population. The WHO Health Promotion: Strategy for the African Region (2013) categorically states that health research is critical in providing evidence-based solutions for the much-needed improvement in health and development [8].

The Bamako Call to Action by the Global Ministerial Forum on Research for Health held in Bamako, Mali from 17-19 November 2008, urged governments to allocate at least 2% of health ministry budgets to research, funders of research and innovation, and international development agencies to invest at least 5% of development assistance funds earmarked for the health sector in research.

The 19th Summit of East African Heads of State endorsed the EAC Health Sector Investment priority Priorities 2018 - 2020 and which included 9 key investment priorities areas for health and health R&D. They also directed the partner states to mobilize resources required to support the implementation.

The literature on financing for health research in Africa is limited. A WHO study (2014) titled "*Expenditures on health research in Sub-Saharan African countries: results of a questionnaire-based survey*" states that the health research expenditure in 2005/2006 in 42 Sub-Saharan African countries was USD 302 million [9].

A BMJ study (2015) titled: *Increasing the value of health research in the WHO African Region beyond 2015 -reflecting on the past, celebrating the present and building the future* [10] attempted to identify the determinants of health research productivity in Africa since the onset of the new millennium (i.e. from 2000 to 2014) through a bibliometric analysis of the WHO African Region. The study found that, in univariable analysis, the countries' GDP, physician density, total health expenditure, private health expenditure, research and development expenditure, and human development index had significant positive associations with increased health research publications. However, in the multivariable model, only the GDP maintained a significant statistical association with the volume of health research publications.

The EAHRC Strategic Plan 2017-2021 has identified domestic financing as one of the key challenges facing health research in the EAC/PS. The dependence on external sources of financing implies that the research agenda tends to be determined externally and this affects the sustainability of health research. The Plan, therefore, highlights the need for mobilising more resources for health research from domestic sources.

In this context, the baseline assessment will lead to a better understanding of the dynamics of health research financing in EAC/PS and enable EAHRC and the stakeholders to strategise and plan for comprehensive health research development aligned to the needs of the region.

2. Methodology

This study was conducted using a three-pronged approach: (i) desk review of secondary data, (ii) administration of a questionnaire to collect quantitative data from health R&D organizations and ministries of the five EAC Partner States and, (iii) key informant interviews and a validation workshop of the stakeholders. The study used 2014-2015 as the baseline year. A participatory approach was used in conducting the baseline assessment and mapping of sources for domestic financing health research in the EAC/PS. The stakeholders including the health research organisations, academic institutions, NGOs involved in health research, the Secretariat and the National Focal Points of EAHRC, and the different ministries of the EAC/PS were consulted.

2.1 Identification of Health Research Organisations

In order to determine the sources of financing for health research, it was necessary, as the first step, to identify the key players in health research. For the purpose of this baseline assessment, the key players were classified into three broad groups:

- a) **Prime Health Research Organisations (PHROs):** Organisations that conduct health research as a primary function.
- b) **Academic Institutions:** Universities and other educational institutions that undertake health research as part of their activities.
- c) **Other Health Research Organisations (OHROs):** This included all organisations other than the above two groups, that undertake health research as one of their activities. For this group, health research may be one of their core activities or may be incidental to programmes/projects undertaken by them.

The next step was to gather data on the investments in health research by these organisations. For the purpose of this baseline assessment, the entire expenditures of the Prime Health Research Organisations were considered as health research investments. For the other two groups, the expenditures were apportioned between health research and the other activities. The estimates were based on the budgets or actual expenditure on health research by these organisations.

2.2 Data Sources

The baseline study involved data collection from diverse sources which included the ministries of health of the EAC/PS, national health research organisations, universities/hospitals, research institutions, NGOs and other organisations operating in the health sector. The data was also collected from the Annual Reports and websites of the research organisations and also from the databases of WHO and other publicly available databases.

2.3 Data Collection Approach and Tools

The data collection approaches are described below.

- a) **Desk Research:** A desk review of the documents was carried out. This included a review of EAC Development Strategy, EAHRC Strategic Plan 2017-2021, National Development Plans of the EAC/PS, the research publications of regional, multilateral and international organisations, as well as the Strategic Plans of National Health Research Organisations, was conducted.
- b) **Structured Quantitative Questionnaires:** A questionnaire that covered the quantitative dimensions of the study was developed. The questionnaires included conventional paper-based and online digital format using Survey Monkey.
- c) **Semi-structured Key Informant Interviews Questionnaires:** The qualitative data, views and opinions were obtained through the key informant interviews using a semi-structured questionnaire.

The tools were tested in the field study, and necessary improvements incorporated before embarking on the data collection exercise.

2.4 The Key Informants

A list of 160 respondents for the survey (shown in Appendix 1). The distribution of the respondents is given in Table 1 below:

The respondents were approached by email, phone and personal visits, and regular follow-up. However, the flow of data was slow. Further, during the review meeting on the 23rd November 2017 held in Arusha, an ad-hoc Expert Working Group was formed to guide and support the consultants in the data collection.

A total of 51 organisations responded to the request for information. The full list of respondents is given in Appendix 2. The distribution of the respondents is given in Table 2 below:

Table 1: Classification of Target Respondents

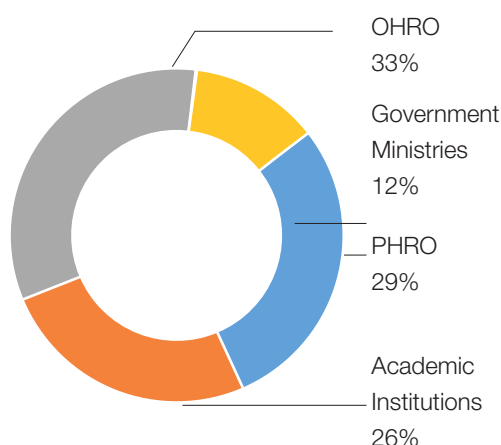
S/No	Type of Respondent	Burundi	Kenya	Rwanda	South Sudan	Tanzania	Uganda	Total
1.	PHRO	3	6	3	4	3	13	32
2.	Academic Institutions	12	10	2	0	11	8	43
3.	OHRO	7	14	8	3	10	22	64
4.	Government	4	5	3	0	5	4	21
	Total	26	35	16	7	29	47	160

Table 2: Summary of Participants

S/No	Type of Respondent	Burundi	Kenya	Rwanda	South Sudan	Tanzania	Uganda	Total
1	PHRO	2	5	1	0	3	4	15
2	Academic Institutions	3	3	1	0	2	4	13
3	OHRO	1	5	0	0	1	10	17
4	Government Ministries	1	1	1	0	1	2	6
Total		7	14	3	0	7	20	51

Figure 1 shows the profile of the participants. 51 participants (29%) that responded were Prime Health Research Organizations, 13 (26%) academic institutions, 12% government institutions and 33% were other health research organisations (Private For-Profit and Private Not for Profit).

Figure 1: Profile of the Participants



2.5 Base Year

The base year for the assessment and reporting was 2014/15. However, data for the previous periods were gathered where the latest data was not available. Similarly, the projected investments for the next five years were also requested in order to develop an understanding of the future levels of research financing required.

2.6 Needs Assessment

The needs assessment was carried out based on the feedback received from the respondents. The respondents provided the details of health research financing required and the actual amount of financing received. In addition, the minimum health research financing requirement specified by the Bamako Call was also used to supplement the data provided by the respondents.

2.7 Data Analysis

The data collected using the questionnaires was analysed to extract relevant information to inform planning for increasing the domestic financing for health research in EAC/PS. The report is presented using US Dollars as the base currency and data received in other currencies were converted to US Dollars using the 'current exchange rate.' The exchange rates used are given in Appendix 3.

From the data received, the different sources of financing for health research from within EAC/PS and external sources were also determined. The percentages of total R&D, health research financing and domestic financing for health research to GDP were computed. The qualitative analysis aimed at identifying challenges of health research financing, and strategies for addressing them.

2.8 Limitations of the Study

The key limitation of the baseline assessment was the relatively low response rate for the survey questionnaire. The assessment also was constrained by the reasons listed below.

2.8.1 Availability of Data

A sampling frame of health research organisations in EAC/PS was not available and the list of the health research organisations used in the survey was not necessarily exhaustive.

Another constraint was the limitation of reliable data on health research financing. For example, the expenditure on the operational research by the health service providers (who are classified among "Other Health Research Organisations" in this report) was not maintained under a separate head from the other services. The main reason for absence of such data was the fact that an exclusive budget line was not provided for health research activities.

There were no respondents from South Sudan. In addition, it was not possible to obtain data from South Sudan using the questionnaire approach as none of the target respondents answered the questionnaires. Although there were only three respondents from Rwanda, it was possible to obtain the detailed data on the source of financing for health research from the government ministries.

Further, well-documented examples of the impact of health research in EAC/PS in support of the investment case in East Africa were not available. The available information is largely limited to the participation in and implementation of the research projects rather than the impact in terms of lives saved, costs saved, revenues generated and cost-benefit ratios. Therefore, a mix of available documented examples from within EAC/PS and examples from the rest of the world were used to support the investment case.

2.8.2 Sensitive Nature of Financial Data

The baseline assessment called for the release of financial data. Given the challenges involved in gathering the data, the EAHR supported the process by writing letters to the respondents calling for their cooperation in providing the data for this important exercise. In some cases, and in spite of the letter of

introduction by the EAHRC and regular follow up, there was a reluctance in providing data for a number of reasons. There was a perception that providing the details of quantum and the specific sources of financing could erode the competitive advantage of the respondents.

2.8.3 Geographical Spread

As the target respondents were spread across the six EAC/PS, the questionnaires for data-collection were distributed using emails and followed up by phone calls. A physical visit to all the HROs across EAC/PS was not a feasible option given the budget constraints, and this presumably led to reduced responses.

As the survey was conducted using the questionnaires sent by email, it was not possible to verify the source documents. However, the consistency of the information was cross-checked using the other available sources of data.

2.8.4 Investments in Fixed Assets

Financing, particularly by government, includes the provision of the land and buildings for health research. For example, some of the government entities do not pay rent for the premises they occupy.

Given the challenges involved in gathering the data, the EAHRC supported the process by writing letters to the respondents calling for their cooperation in providing the data for this important exercise.

3. Sources of Domestic Financing for Health Research in EAC/PS

The following sections provide the summary of findings of the Baseline Assessment and Mapping Sources for Domestic Financing for Health Research for each of the EAC/PS and EAC as a region.

3.1 Economic Indicators Related to Health Research

In order to contextualise the findings of the baseline assessment of health research financing, it is pertinent to review the general economic situation and the overall position of health financing in the EAC/PS.

Table 3 below shows the key indicators such as GDP, GDP growth rate, per capita income, national budget outlay, the percentage of total R&D expenditure, total health expenditure, government health budget outlay and the share of health budget as a percentage of the total national budget.

The data reflects low income and expenditure levels that characterise EAC/PS as developing countries. The total R&D expenditure (for all the sectors) as a percentage of the GDP, which often has a positive correlation with the health research expenditure, is also low.

3.2 Health Research Financing Required

A ‘needs assessment’ is an essential step in determining financing gaps in health research. Reviewing the research prioritisation plans and the budget estimates for conducting the research would be a logical approach to determine the financing needs. However, the health research prioritisation plans are available only in two EAC/PS (i.e., Tanzania and Rwanda). The budget for the implementation of the health research priorities is not available in any of the EAC/PS. Therefore, the needs assessment was carried out using the input provided by the respondents on the financing requirements (Appendix 4). The data was also supplemented by applying the minimum level of financing stipulated in the Bamako Call to Action. (Appendix 5). Table 4 below shows the share of health research financing required in EAC/PS.

3.3 Policy Framework for Health Research and its Financing

It is pertinent to consider whether or not each of the EAC/PS has established (a) health research financing policies, (b) health research policies and (c) the health policies to guide investments in health and health research.

The summary of the current policy framework for health research and its financing in EAC/PS is given below (Table 5).

Table 3: Economic Indicators Related to Health Research

Indicators (2015)	Burundi	Kenya	Rwanda	S/Sudan	Tanzania	Uganda
Gross Domestic Product (USD Million) [11]	3,067	63,768	8,261	9,015	45,628	27,059
GDP Growth Rate [12]	-3.92	5.7%	8.9%	-6.4%	7.0	5.2 %
Per Capita Income (USD) [13]	301	1350	710	759	872	674
National Budget (USD Million)	970	17,132	2,580	2,232	14,570	5,958
R&D Expenditure as % of GDP [14] [15]	0.1%	0.8%	0.4%	N/A	0.5%	0.5%
Health expenditure (USD Million)	248	3,310	659	333	1,710	1,849
Government Health Budget (USD Million)	84	1,289	242.69	89.25	1001.58	733.86
Health Budget as % of National Budget	8.66%	7.52%	10.91%	4.00%	6.87%	7.96%

Table 4: Health Research Financing Required

EAC/PS	Financing Required (USD Million)
Burundi	7.95
Kenya	250.12
Rwanda	25.42
Tanzania	77.00
Uganda	136.49
Total	496.88

Table 5: Details of Health Research Policy Framework

Name of PS	Health Research Policy	Health Research Financing Policy
Burundi	<ul style="list-style-type: none"> Does not have an approved Health Research Policy 	Does not have a Health Research Financing Policy
Kenya	<ul style="list-style-type: none"> Kenya Health Act 21 of 2017 	Kenya Health Act 21 of 2017: provides for the allocation of a minimum 30% of National Research Fund
Rwanda	<ul style="list-style-type: none"> Health Sector Research Policy February 2012 in place The National Health Research Agenda 2014-2018 	Health Research Financing Policy or any firm commitment to health research not in place
South Sudan	<ul style="list-style-type: none"> Does not have an approved Health Research Policy or Priorities in place. 	Health Research Financing Policy or any firm commitment to health research not in place
Tanzania	<ul style="list-style-type: none"> NIMR has established a Research Policy, Guidelines and Regulations for itself and the associates Tanzania Health Research Priorities 2013-18 in place 	Health Research Financing Policy or any firm commitment to health research not in place
Uganda	<ul style="list-style-type: none"> Uganda National Health Research Organisation Act, 2011 Health Research Policy 2012-2020 	Health Research Policy 2012-2020 commits a government commitment of at least 2% of national health expenditure to health research.

The Table shows that Kenya, Rwanda, Tanzania and Uganda already have the health research policies or acts in place, although only Kenya specifies a clear research financing framework for the government. Further, health research priorities are identified only in two of the EAC/PS i.e., Tanzania and Rwanda.

3.4 Summarised Findings for EAC

This section provides a summary of the total financing for health research and the share of financing from the domestic sources in all the EAC/PS.

Table 6 and Table 7 below show that the total health research financing in EAC was USD 301.71 million of which the share of the domestic sources was USD 43.62 million or 14.46%. This means that EAC is dependent on external sources for 85.54% of the financing for health research.

Table 6: Health Research Financing Summary (USD Million)

S/No	Description	Burundi	Kenya	Rwanda	Tanzania	Uganda	EAC Total
1	PHRO	979,473	115,813,724	5,702,824	32,394,519	29,375,261	184,265,801
2	Academic institutions	790,600	31,807,667	136,032	7,212,113	35,006,479	74,952,891
3	OHRO	0	1,000,000	0	0	31,650,914	32,650,914
4	Government	19,181	0	95,525	0	9,728,960	9,843,666
	Total	1,789,254	148,621,391	5,934,381	39,606,632	105,761,614	301,713,272

Table 7: Domestic Financing of Health Research Financing Summary (USD Million)

S/No	Description	Burundi	Kenya	Rwanda	Tanzania	Uganda	EAC Total
1	PHRO	44,191	23,834,724	79,610	7,726,381	50,000	31,734,906
2	Academic Institutions	0	5,000	0	0	278,552	283,552
3	OHRO	0	736,669	0	0	435,000	1,171,669
4	Government	19,181	0	0	0	10,415,445	10,434,626
	Total	63,372	24,576,393	79,610	7,726,381	11,178,997	43,624,753

3.5 Burundi

Six institutions in Burundi responded to the baseline survey. They include the Ministry of Health, National Institute of Public Health, Integrated Health Project in Burundi and University of Ngozi. Two institutions i.e., Faculty of Medicine, Burundi University and CHUK Kamenge Faculty of Medicine provided only the qualitative data. Based on the survey findings, the health research financing in Burundi in 2014/15 amounted to USD 1,789,254. Of this, USD 63,372 was generated from domestic sources.

3.5.1 Analysis

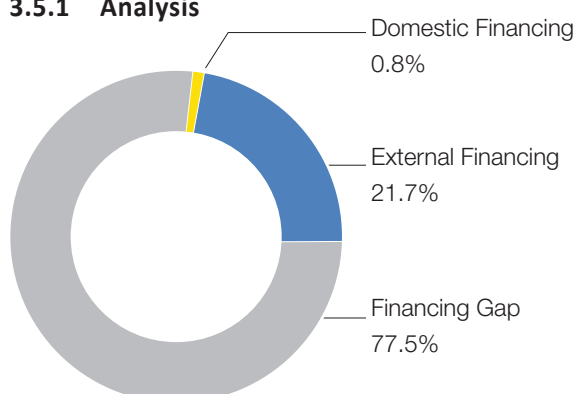


Figure 2: Status of Financing for Health Research - Burundi

Table 8: Annual Health Research Financing and the Share of Domestic Financing - Burundi

S/No	Institution	Description	Total Health Research Financing (USD)	Domestic Financing (USD)
1	National Institute of Public Health, INSP	A Prime Health Organisation which conducts health research as a predominant activity.	147,304	44,191
2	Integrated Health Project in Burundi	A Prime Health Organisation which conducts health research as a predominant activity.	832,169	0
3	Ministry of Health	Government ministry that supports health research by contributing to strengthening health research	19,181	19,181
4	University of Ngozi	Academic Institution which also conducts health research	790,600	0
	Total		1,789,254	63,372

NB: Integrated Health Project in Burundi does not have a separate budget for Health Research. Therefore, a tenth of its budget for 2015/16 was considered as health research budget.

The baseline assessment shows that the external sources contributed 96.5% of the health research financing in Burundi, and the domestic sources contributed 3.5%. In conclusion, it can be said that the health research in Burundi is heavily dependent on external aid.

The minimum level of financing required amounts to USD 7.95 million. Given that the total financing in 2014/15 was USD 1.79 million, there is a financing gap of USD 6.16 million or 77.5%.

Health research financing as a percentage of GDP stands at 0.06%.

The depth of the problem is reflected also in the fact that the GDP of the country experienced a negative growth in 2015.

3.5.2 Other Factors Influencing Health Research Financing

The structural organisation of research in Burundi functions at three levels: the decision making, general policy at the ministerial level; the planning, budgeting and management by the Department of Scientific Research supported by its committees; and the executive level in the work of the research centres, science and technology services.

The National Policy of Scientific Research and Technological Innovation 2014-2018 provides a broad outline of health research. However, national policies on health research financing or the health research priorities are not established.

3.6 Kenya

Thirteen organisations in Kenya provided information on health research during the mapping exercise. Table 9 shows the estimated total health research financing of these institutions.

3.6.1 Analysis

Based on the data collected, the total health research financing in Kenya in 2014/15 amounted to USD 148,621,391, out of which USD 24,576,393 was generated from domestic sources. 83.46% of the financing was generated from external sources and only 16.54% of the financing was realised from domestic sources.

The health research financing, as a percentage of GDP, stood at 0.234%.

Table 9: Annual Health Research Financing and the Share of Domestic Financing - Kenya

S/No	Institution	Description	Total Health Research Financing (USD)	Domestic Financing (USD)
1	Kenya Medical Research Institute	A Prime Health Organisation which conducts health research as a prime and predominant activity.	95,983,724	21,183,724
2	AMREF Kenya	International NGO involved in Health research as one of the thematic areas.	2,205,000	0
3	African Population and Health Research Centre	Health research organisation which conducts health research regularly as one of the thematic areas	16,100,000	2,576,000
	Afya Medical Research Institute	Health research organisation which conducts health research regularly as one of the thematic areas	1,500,000	0
6	Centre for Infectious and Parasitic Diseases Control Research	Health research organisation which conducts health research regularly as one of the thematic areas	25,000	7,500
7.	Moi University	Academic Institution which also conducts health research (along with research activities in other disciplines)	5,000	5,000
8	Kenyatta National Research Hospital	A hospital which also conducts health research regularly as a thematic area.	1,000,000	50,000
9	AMPATH Program (Moi Teaching and Referral Hospital)	A teaching institution as part of a hospital which also conducts health research regularly as a thematic area.	31,498,559	686,669
10	Maseno University	Academic Institution which also conducts health research (along with research activities in other disciplines)	304,108	0
	Total		148,621,391	24,576,393

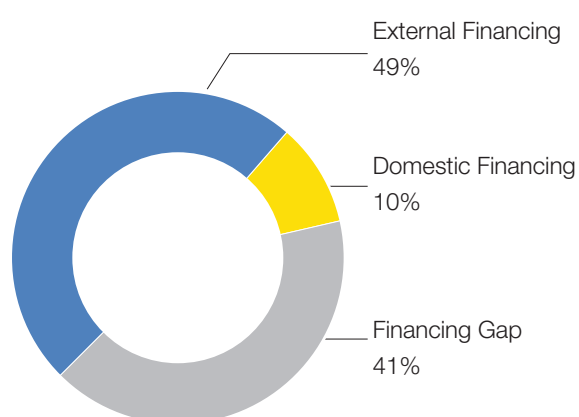


Figure 3: Status of Financing for Health Research - Kenya

The assessment shows that Kenya receives USD 101 million (40.6%) less than the health research financing required.

3.6.2 Other Factors Influencing Health Research Financing

Kenya Medical Research Institute (KEMRI), established through the Science and Technology (Amendment) Act of 1979, is the national body responsible for carrying out health research in Kenya. Health Act 21 of 2017 stipulates that a portion of not less than thirty percent of the National Research Fund shall be allocated for health research. The National Research Fund (NRF) is mandated to mobilise and manage financial resources for the advancement of the national innovation system, based on priorities set by NACOSTI, as per the Service and Technology Innovations Act, 2013.

Health Act 21 of 2017 provides the legal basis for developing the health research policy. The health research priorities are currently in draft form and yet to be approved.

3.7 Rwanda

Table 10 below shows the details of the sources of the total for health research financing and the share of domestic financing of Rwanda

Table 10: Annual Health Research Financing and the Share of Domestic Financing - Rwanda

S/No	Financing Sources	Health Research Financing (USD)	Domestic Financing (USD)
1	American Red Cross	1,716	0
2	Belgian Government	3,021	0
3	Canadian Government	21,347	0
4	Domestic Resources	79,610	79,610
5	Elizabeth Glaser Pediatric AIDS Foundation	545,538	0
6	Emory University	697,798	0
7	European Developing Countries Trial Partnership	36,478	0
8	Gardens for Health International	37,787	0
9	Global Fund	643,001	0
10	Institute for Reproductive Health	72,396	0
11	Ireland Government	20,825	0
12	Millennium Villages Project	5,323	0
13	Netherlands Government	53,779	0
14	Packard Foundation	2,483	0
15	Partners in Health (PIH)	552,071	0
16	Spanish Red Cross	2,974	0
17	Swiss Development Cooperation	20,918	0
18	The Fred Hollows Foundation	68,718	0
19	United Nations Population Fund	990,328	0
20	The United Kingdom	13,472	0
21	University of Liverpool	38,242	0
22	US Government	1,579,411	0
23	Vision for a Nation Foundation	147,448	0
24	WHO	299,697	0
	TOTAL	5,934,381	79,610

One may note that Table 8 provides the financing value by source rather than the investment value by the research organisations. (This approach was used because data for Rwanda was more complete on the sources of financing in this format). Examples of financing of some of the organisations are also given in Table 9.

Table 11: Annual Health Research Financing – Rwanda - Data from Respondents

S/No.	Institution	Description	Health Research Financing (USD)	Domestic Financing (USD)
1.	University of Rwanda	Academic Institution which also conducts health research	136,031	0
2.	Ministry of Health	Government ministry that supports health research though not directly involved	95,525	0

3.7.1 Analysis

The total budget for health research financing of Rwanda amounted to USD 5,934,381 of which only USD 79,610 was generated from the domestic sources and USD 5,854,771 from external sources.

The minimum amount of financing required for health research was USD 25.42 million and the findings show a gap of USD 19.49 million or 76.65%. The health research financing, as a percentage of GDP, stands at 0.07%.

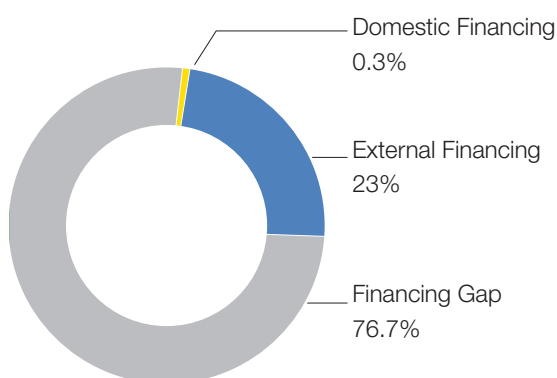


Figure 4: Status of Financing for Health Research-Rwanda

The data shows that health research in Rwanda is nearly entirely 98.66% dependent on the external financing.

3.7.2 Other Factors Influencing Health Research Financing

The National Health Research Agenda 2014-2018 provides a framework of orientation for all researchers, implementers, academics, and development partners for a coordinated response to the need for evidence to inform policy making and program implementation. This research agenda is largely aligned to the Health Sector Strategic Plan III 2012-2018, implemented by the Ministry of Health in collaboration with the University of Rwanda School of Public Health through the Center of Excellence for Health Systems Strengthening, in which most themes and research priorities were identified under specific strategic areas. The agenda also considers non-health research areas that have an impact on the health status of the population.

3.8 Tanzania

Table 12 below shows examples of Health Research Organisations in Tanzania and the total health research financing and their domestic financing share, based on the data received during the baseline assessment.

Table 12: Annual Health Research Financing and the Share of Domestic Financing - Tanzania

S/No	Institution	Type	Health Research Budget (USD)	Domestic Financing (USD)
1	Muhimbili University	Academic Institution which also conducts health research	7,187,113	0
2	Kilimanjaro Clinical Research Institute (KCRI)	A Prime Health Organisation which conducts health research as a predominant activity.	800,410	0
3	National Institute for Medical Research	A Prime Health Organisation which conducts health research as a predominant activity.	16,439,109	7,726,381
4	Kilimanjaro Christian Medical University College	Academic Institution which also conducts health research	25,000	0
5	Public Health Laboratory Ivo de Carneri	Health Research Organisation which conducts health research regularly as one of the thematic areas	155,000	0
6	Ifakara Health Institute	Health Research Organisation which conducts health research regularly as one of the thematic areas	15,000,000	0
	Total		39,606,632	7,726,381

3.8.1 Analysis

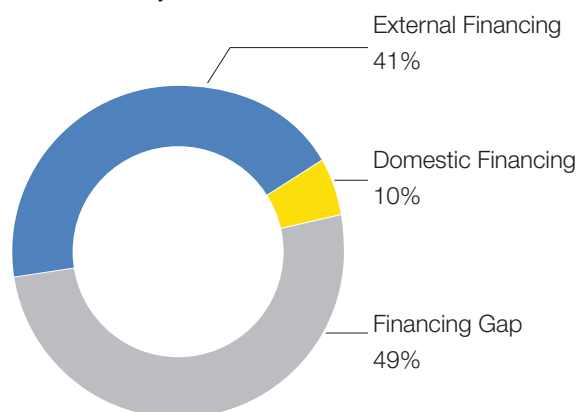


Figure 5: Status of Financing for Health Research-Tanzania

Table 10 shows that a total of USD 39,606,632 was spent on research during the year under review. Of this, USD 7,726,381 was from domestic sources representing a 19.5% contribution. The baseline assessment shows that Tanzania is dependent on external sources of financing for health research to the extent of 80.5%.

The minimum level of financing required for health research amounts to USD 77.03 million and the findings show a gap of USD 37.42 million or 48.58%. Health research financing as a percentage of GDP stands at 0.118

3.8.2 Other Factors Influencing Health Research Financing

The National Institute for Medical Research, as a parastatal institution under the Ministry of Health, was established by the Parliament Act No. 23 of 1979 and empowered to oversee all health research institutions in the country. NMIR has also

established a health research policy and health research priorities. The health research sector in Tanzania faces a number of challenges in executing its mandates including inadequate direct government financing for health research resulting in a high reliance on donors; inadequate human resource for specialised areas due to employment restrictions and inadequate stable training funds; limited specialised research facilities including high-tech-laboratories; and poor research uptake resulting from a sparse knowledge management system.

3.9 Uganda

Table 13 shows data received from the Health Research Organisations in Uganda, their total health research financing and the share of domestic financing budgets. The Table shows that nineteen organisations provided quantitative data on research financing. One institution opted to remain anonymous

3.9.1 Analysis

Of the total financing of USD 105,761,614 for the health research, USD 94,582,617 (89.5%) was received from the external sources.

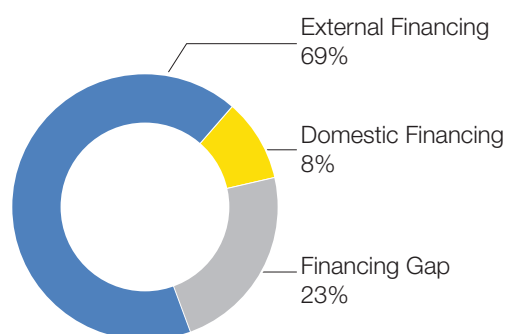


Figure 6: Status of Financing for Health Research-Uganda.

Table 13: Annual Health Research Financing and the Share of Domestic Financing - Uganda

S/No	Institution	Type	Health Research Budget (USD)	Domestic Financing (USD)
1	Infectious Disease Research Collaboration	A Prime Health Organisation which conducts health research as a predominant activity.	6,299,349	0
2	Infectious Disease Institute	A Prime Health Organisation which conducts health research as a predominant activity.	4,643,583	0
3	Baylor Children's Clinical Centre Of Excellence	Health Research Organisation which conducts health research regularly as one of the thematic areas	3,903,398	0
4	Elizabeth Glaser Paediatric AIDS Foundation	Health Research Organisation which conducts health research regularly as one of the thematic areas	1,604,395	0
5	The AIDS Support Organisation	Health Research Organisation which conducts health research regularly as one of the thematic areas	2,902,605	0
6	Makerere University School of Health Sciences	Academic Institution which also conducts health research	500,000	0
7	Community Health Alliance Uganda (CHAU)	Health Research Organisation which conducts health research regularly as one of the thematic areas	30,000	0
8	International Centre for AIDS Care Treatment Programs	A Prime Health Organisation which conducts health research as a predominant activity.	4,500,000	0
9	Action Group for Health Human Rights and HIV/AIDS	Health Research Organisation which conducts health research regularly as one of the thematic areas	36,492	0
10	Busitema University, Faculty of Health Sciences	Academic Institution which also conducts health research)	50,000	2,500
11	Coalition for Health Promotion and Social Development	Health Research Organisation which conducts health research regularly as one of the thematic areas	396,039	0
12	Joint Clinical Research Centre Limited	Health Research Organisation which conducts health research regularly as one of the thematic areas	8,700,000	435,000
13	Uganda Virus Research Institute (Includes Coop Agreements with MRC, IAVI and CDC)	A Prime Health Organisation which conducts health research as a predominant activity.	18,482,329	0
14	Makerere University Walter Reed Project	A Prime Health Organisation which conducts health research as a predominant activity.	8,718,183	0
15	Anonymous (University/School)	Academic Institution which also conducts health research	34,456,479	276,052
16	Ministry of Health, Uganda	Government ministry that supports health research though not directly involved	9,555,643	9,555,643
17	Uganda National Council for Science and Technology	A Prime Health Organisation which conducts health research as a predominant activity.	173,317	0
18	Other Research Institutions	Health research organisations which conduct health research regularly as one of the thematic areas	809,802	809,802
	Total		105,761,614	11,178,997

Note: The Makerere University School of Public Health, one of the HROs, provided qualitative data only.

Based on the feedback from the respondents, Uganda required USD 136.49 million for health research for the year under review and there was a financing gap of USD 30.73 million. Health research financing as a percentage of GDP stood at 0.39%.

3.9.2 Other Factors Influencing Health Research Financing

The Ministry of Health developed the Health Sector Development Plan 2015/16-2019/20 (HSDP-II) and identified the low government

financial allocation to health research, weak collaboration mechanisms between planners, research institutions, industry and academia and partners as some of the key challenges facing the health research in the country.

Health research in Uganda is coordinated by the Uganda National Health Research Organisation under the legal framework of the Uganda National Health Research Organisation Act, 2009. The organisation is charged with promoting and guiding health research and development in Uganda.

3.10 Sources of Financing

Table 15 provides detailed data on the different sources of Health Research Financing in EAC/PS. It also shows that the development partners and NGOs/research institutions outside East Africa are the main sources of financing for health research in the EAC/PS.

3.11 Financing Gap

Table 16 provides information on the financing gaps in health research. It further shows the share of health research financing in the total health budget and the GDP.

Table 15: Sources of Financing

S/N.	Sources of Financing	Burundi	Kenya	Rwanda	Tanzania	Uganda
1	Government funding	28.32%	16.59%	1.34%	37.53%	2.78%
2	Private sector within East Africa	5.26%	26.8%	0	0	0
3	Private sector from outside East Africa	0	36%	0	7.89%	5.73%
4	NGOs/Development Partners within East Africa	0	0	0	3.75%	0.02%
5	NGOs/Development Partners from outside East Africa	0	2.11%	98.66%	41.94%	51.71%
6	Universities/Academic institutions within East Africa	0	0.1%	0	0	0.004%
7	Universities/Academic institutions from outside East Africa	0	11.52%	0	8.9%	12.25%
8	Financing from the community	0	0	0	0	0
9	Other sources within East Africa	0	0.39%	0	0	0
10	Other sources from outside East Africa	66.32%	7.12%	0	0	27.52%
	TOTAL	100%	100%	100%	100%	100%

Table 16: Financing Gap (USD Million)

Countries	Financing Requirement	Financing Received	Financing Gap	Health Research Financing as a Percentage of GDP
Burundi	7.95	1.79	6.16	0.06%
Kenya	250	148.62	101.39	0.23%
Rwanda	25.42	5.93	19.49	0.07%
Tanzania	77.03	39.61	37.39	0.09%
Uganda	136.49	105.76	30.73	0.39%
TOTAL	496.88	301.71	195.16	0.21%

The following figure shows the financing received and the financing gaps for each of the Partner States.

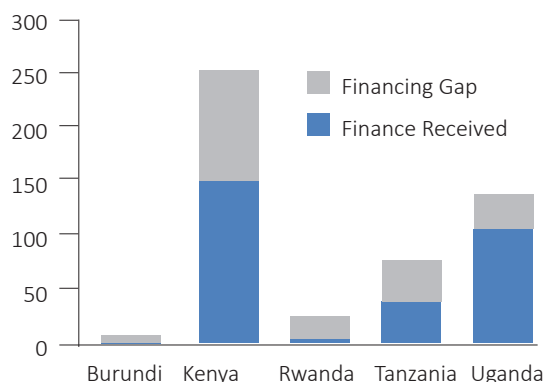


Figure 7: Financing Gap (USD Millions)

3.11.1 Discussions

The findings show that the total health research financing of EAC as a region was USD 301.71 million out of which only USD 43.62 million or 14.5% was generated from domestic sources. The balance amount of USD 258.08 million (or 85.5%) is financed from the external sources. Further, there is a financing gap of USD 195.13 million compared to the total financing requirement of USD 496.88 million (Table 4).

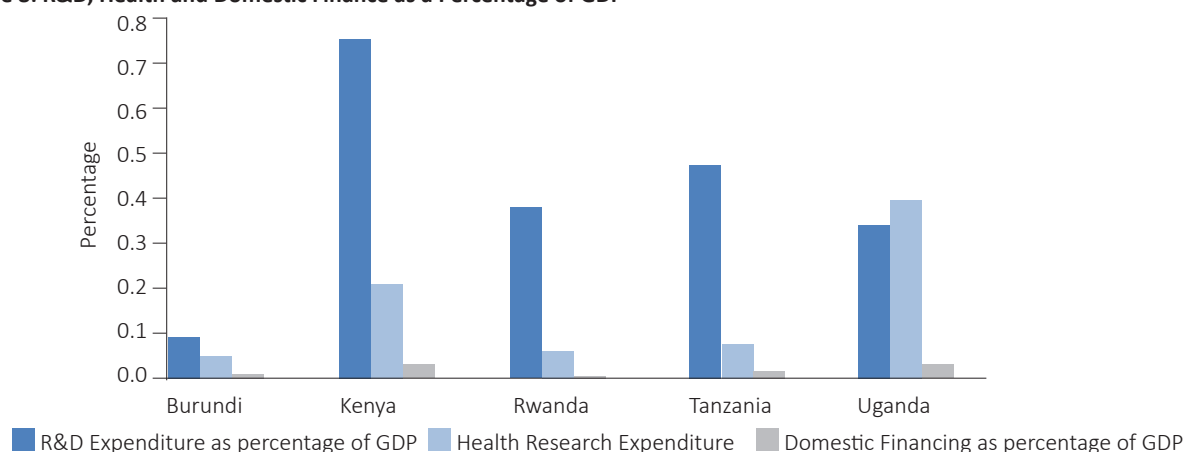
The total health research financing as a percentage of the total GDP of EAC stands at 0.21%, and the total domestic financing for health research as a percentage of GDP is low at 0.028%.

Further, Table 17 shows the percentages of the total R&D investment, health R&D investment and the domestic financing for health research. These investments are very low as shown in Figure 8.

Table 17: R&D, Health R & D and Domestic Financing (as Percentage of GDP)

Indicators (2014/15)	Burundi	Kenya	Rwanda	Tanzania	Uganda
R&D expenditure as % of GDP	0.10%	0.79%	0.40%	0.50%	0.50%
Health research expenditure	0.06%	0.23%	0.07%	0.09%	0.39%
Domestic financing as a percentage of GDP	0.002%	0.039%	0.001%	0.02%	0.044%

Figure 8: R&D, Health and Domestic Finance as a Percentage of GDP



4. Challenges in Health Research Financing

In order to ensure efficiency in allocation, there is need to address the bottlenecks faced by the health R&D and innovation ecosystem in East Africa. This includes addressing the following structural and systemic challenges as highlighted by key informants during the interviews:

- i. Fragmented Research Efforts and Prioritisation:** There is inadequate coordination of health research initiatives across the Community. Research priorities of the EAC/PS are not well-defined. Therefore, the research efforts are not always focused on needs of the EAC/PS. Research prioritisation and the sharing of results in a well-coordinated manner will result in efficient use of resources, thereby avoiding the duplication of efforts.
- ii. Externally Driven Research Agenda:** The research in the EAC/PS is funded predominantly by external organisations. Therefore, the research agenda in the EAC tends to be externally driven rather than based on the priorities of the EAC/PS.
- iii. Community Linkages:** There is a lack of involvement of and linkages with the communities in which the health research is conducted. This leads to lack of interest, low participation and at times, mistrust. It is necessary to establish Community and Public Participatory mechanisms with key stakeholders in the community, the private sector and the philanthropy community. It is also important to build capacity of all levels of health care delivery system to conduct implementation research.
- iv. Greater Role for Academic Institutions in Health Research:** The potential of the academic institutions in the EAC/PS are not fully utilised in health research. The academic institutions should be more involved in health R&D, and they should be supported in the areas that require improvements.
- v. Lack of infrastructure:** Health R&D research infrastructure is inadequate in EAC/PS. While capacity in clinical trials has been built over the years, capacity to conduct advanced basic research and pre-clinical research remain limited. The EAC/PS will need to invest in strengthen capacity for “end-to-end” health product development that have both high public health impact and sustainable development value.
- vi. Accountability:** Accountability mechanisms should be put in place to ensure fair competition and merit based awards of research grants, adherence to national and international standards in conduct of research, efficient and transparent management of research grants.
- vii. Human Resources for Research:** There is a need to enhance human resource capacity for health research. Such capacity strengthening efforts are needed in not only technical areas of research but also the administrative areas such as grants management.
- viii. Investment Case:** Defining specific returns on investment in health research is a complex issue. The investment case for health research is not well-articulated. Therefore, health research does not attract the attention of the policymakers and potential investors.
- ix. Intellectual Property Rights:** A weak framework on intellectual property rights, copyrights, and patents increases the risk perception of the potential investors, and is a disincentive to health research.

“Donor agencies have grants that are very competitive globally and Africans have slim chances of winning such grants without preliminary data. Local funds should be availed to researchers to generate preliminary findings that can support grant applications.” one of the respondents commented.

One of the respondents noted the “effort to foster inter-institutional collaborations and allow scientists to leverage each other’s capabilities.”

“The agenda for health research in the EAC is still set by foreign funding agencies and hence sometimes this may not meet the health challenges we face;” noted a respondent.

“There are very few laboratories and organised research programs/groups and even the few available lack adequate instrumentation that meets today’s needs. Therefore, the government should invest in the research environment; upgrade laboratories, building spaces and purchase modern equipment needed by scientists;” one of the respondents pointed out.

One of the respondents said that “answering the domestic problems for immediate application rather than purely doing research for academic pursuit would help promote health research in EAC.”

5. Strategies for Attracting Domestic Investments for Health Research

Based on the data and inputs and outcome of validation workshops with health financing experts from ministries of health and finances received from the assessment and mapping of domestic sources of financing for health research, the following strategies and policies are proposed for increasing domestic sources of financing health research:

5.1 Create a Legal Framework on the Allocation from the Domestic Sources for Health Research in EAC/PS

One of the strategies will be to establish laws that provide for a minimum level of resource allocation for health research. A minimum of 1.25% of GDP should be earmarked annually for R&D by the EAC/PS, and 30% of the R&D budget should be allocated to health research. It is recommended that each of the EAC/PS enact laws that will enforce such allocations.

The Kenya Health Act 21 of 2017 is a step in the right direction. The Act stipulates that a portion of not less than 30% of the National Research Fund of Kenya shall be allocated to health research.

However, the R&D investments of the EAC/PS range between 0.1% and 0.8% – way below the expected minimum level – deliberate and concerted efforts will have to be made to effect a significant increase in R&D investments. Therefore, a gradual increase is recommended over the next 5 years.

5.2 Earmark 10% of the Sin Taxes collected by each of the EAC/PS for health research

Allocation of certain revenue streams that are linked to health such as the *Sin Taxes* to health research is apparently logical. This is because health research can use part of the tax revenues from products such as cigarettes and alcohol to address the negative externalities created by them.

Given the critical importance of health research, it is recommended that 10% of the sin taxes collected be allocated to Health R&D. This will amount to USD 68.73 million annually based on data collected

from all PS. The drug licencing fee is another revenue stream closely linked to health research and, therefore, apportioning such revenue for health research is a plausible strategy.

However, enactment of laws stipulating allocation of a defined share of government revenue to health research requires the support of the lawmakers and government. Therefore, it will be necessary to engage the Health Committees of the Parliaments and officials in relevant ministries to gain their support for this important developmental issue.

5.3 Set Up an East Africa Health Research Fund

Establishment of a specific fund exclusively for the health research could address some of the critical health research financing needs of EAC/PS. Such a fund which may be designated as the *East Africa Health Research Fund (EAHRF)*, can be formed along the lines of Health Product Research and Development Fund of the WHO, supported by the subscriptions of EAC/PS and development partners, among others [16]. EAHRF, when materialised, will facilitate implementation of large health research projects that cannot be handled by a single Partner State. In the absence of such a joint effort, each Partner State tends to focus on the low-cost research activities that may not create a significant impact.

The EAC/PS will initially contribute to the corpus of the fund. Thereafter, the financing will be raised through a combination of the budget allocation by EAC/PS, donations by individuals and institutions and through the issuance of health research bonds in the form of Development Investment Bonds.) The details of Bond Programmes implemented by other African Countries are given in Appendix 6)

Further, to bring about the developmental impact, EAHRF should be constituted with “new” money, as opposed to redistributing funds that are already available to public health researchers. It is proposed that the Fund when fully established, will have a capacity of extending financing support of USD 20 million annually.

Potential for Raising Domestic Financing by Apportioning of Sin Tax Revenues

Sin taxes are applied to products that create negative externalities. Alcohol and cigarettes are examples of such products. It is logical that the revenues collected through Sin Taxes are used to address the externalities created by them. In other words, a portion of funds collected from such products that create negative health externalities should be allocated to health and health research. Details of some of the Sin Taxes collected by a few of such products in EAC/PS are given below.

Table 18: Sin Tax Revenue

Annual Revenue in USD million	Kenya [31]	Rwanda [30]	Tanzania [28]	Uganda [29]
Cigarettes		7.06	4,16	12.57
Beer	301.25	57.25	30.23	101.26
Spirits	80.55	70.49	0.97	21.51
Total	381.8	134.8	35.36	135.34

5.4 Mobilise at least 5% of the CSR Budgets in EAC/PS for Health Research

Health research is a high impact area that can generate interest from the corporate sector. Therefore, well-articulated health research projects will be able to attract support from Corporate Social Responsibility Initiatives of the large companies operating in East Africa.

Corporate Social Responsibility in EAC/PS

An analysis showed that 20 companies in Kenya, Rwanda, Tanzania and Uganda invested USD 18.67 million in CSR activities in 2014/15. (Please see the details in Appendix 7) The fact that these 20 companies form only a fraction of the corporate community in the EAC reflects the potential for generating domestic financing for health research through CSR.

CSR is different from classic “cheque-book philanthropy” in that it tries to improve the business environment of a company, for example, by lowering harmful social or ecological externalities. Given its high impact, health research has the potential to mobilise support through CSR. With the well-coordinated fundraising efforts, it is projected that 5% of the CSR funding in EAC/PS could be allocated to health research generating USD 900,000 annually.

5.5 Mobilise 1% of the Inward Remittance by the Overseas Citizens of EAC/PS for Health Research by Offering Bond Programmes and Encouraging Donations

There is a significant population of East Africans living abroad transferring substantial amounts in foreign remittances to the EAC/PS. This segment has the capacity and patriotic inclinations to support health research and development of EAC/PS. There is a need to position health research so as to attract support from this segment.

Table 19: Foreign Inward Remittance (USD Million) [17]

Partner State	2014	2015	2016
Burundi	56	51	51
Kenya	1,441	1,561	1,739
Rwanda	184	159	173
Tanzania	389	388	411
Uganda	888	902	1,016
Total	2,958	3,061	3,390

This strategy will entail efforts to (a) reach out to the East Africans living overseas, (b) develop the instruments such as Social Investment Bonds and (c) articulate the investment case for health research. Working with the relevant ministries (E.g. Ministry of Labour) and leveraging the potential of social media and attending the events organised by the EAC citizens abroad are steps required to garner support from the expatriate community.

With well-articulated campaigns accompanied by financing instruments such as bonds, it is projected that one percent of the foreign inward remittances translated into health research financing which will generate USD 34 million annually. Diaspora Bonds, Social Impact Bonds (SIBs) and Development Impact Bonds (DIBs) are examples of public-private partnerships that drive resources toward social programmes.

Such initiatives will involve a feasibility study, engaging a fund manager and obtaining the approvals of the Capital Market Authorities and the support of the line ministries of the EAC/PS.

5.6 Increase Health Research Financing through Education and Scholarships to USD 10 Million Annually.

The potential for tapping into individual and family-level financing for health research can be further explored. About 2000 scholars join the postgraduate, Masters and PhD level programmes in health offered by the educational institutions across EAC every year. The potential for carrying out relevant health research and generating new knowledge by the student scholars is substantial. It may be noted that a large part of the financing for research by student scholars is provided by their families, and therefore, this segment generates its own funding for research. It is estimated that USD 10 million could be mobilised annually through this channel.

6. Implementation Plan

There is need to develop a strategic implementation plan in order to successfully implement these innovative domestic financing options. In addition to appropriate policies and legislations, the

need to build political will and a critical mass of champions is required. Below is the suggested implementation plan.

No.	Strategy	Activity	Milestones
1	Create a legal framework on the resource allocation from the domestic sources for health research in EAC/PS.	Conduct consultative meetings with the stakeholders, present the investment case for increasing the domestic health research financing in EAC/PS by creating a legal framework for the resource allocation.	<ul style="list-style-type: none"> • Laws that provide for at least 1.25% of GDP to be allocated to R&D and 30% of which earmarked for health promulgated by July 2021 in all EAC/PS/
2	Earmark 10% of the Sin Taxes collected by each of the EAC/PS for health research.	Develop and present to the stakeholders the position papers that articulate the need and justification for the allocation of a share Sin Taxes for health research.	<ul style="list-style-type: none"> • Position Paper developed and presented to the stakeholders December 2018. • Laws/regulations for allocation 10% Sin Taxes established by Dec 2019 in all the EAC/PS/
3	Set up East Africa Research Fund with an annual capacity of USD20 million for health research in EAC/	<ol style="list-style-type: none"> Network with stakeholders and gain commitment to launch the financing. Develop the charter and operations guidelines of the Fund. Launch the fund. 	<ul style="list-style-type: none"> • Health Research Fund charter developed by March 2019. • A fund with an annual capacity of USD 20 million launched in 2020.
4	Mobilise at least 5% of the CSR budgets in EAC/PS for health research.	<ol style="list-style-type: none"> Identify corporate organizations for partnership and prepare and present CSR concepts. Establish MOUs and implement the CSR activities. 	<ul style="list-style-type: none"> • Identified corporate organisations for partnership March 2019. • MOUs established by June 2019. • Number of CSR activities conducted and amount of resources mobilised.
5.	Mobilise 1% of the inward remittance by the overseas citizens of EAC/PS for health research by offering bond programmes and encouraging donations.	<ol style="list-style-type: none"> Network with the citizens in the diaspora and present well-articulated health research programs that clearly demonstrate the development impacts. Develop bond programmes for attracting funds from EAC citizens living abroad. 	<ul style="list-style-type: none"> • Ongoing engagement with the stakeholders. • Bond program charter established by June 2019. • At least one bond program launched in 2020.
6.	Increase health research financing through education and scholars hips to USD10 million annually.	<ol style="list-style-type: none"> Establish MOUs with academic institutions and foundations to sponsor scholarships and promote health research. 	<ul style="list-style-type: none"> • 10% increase in the number of health research scholars in the EAC/PS every year till 2020/21. • Increase in health research financing through the education sector.

7. Monitoring and Evaluation Framework

The following Monitoring and Evaluation Framework will guide this road map to domestic financing for health R&D.

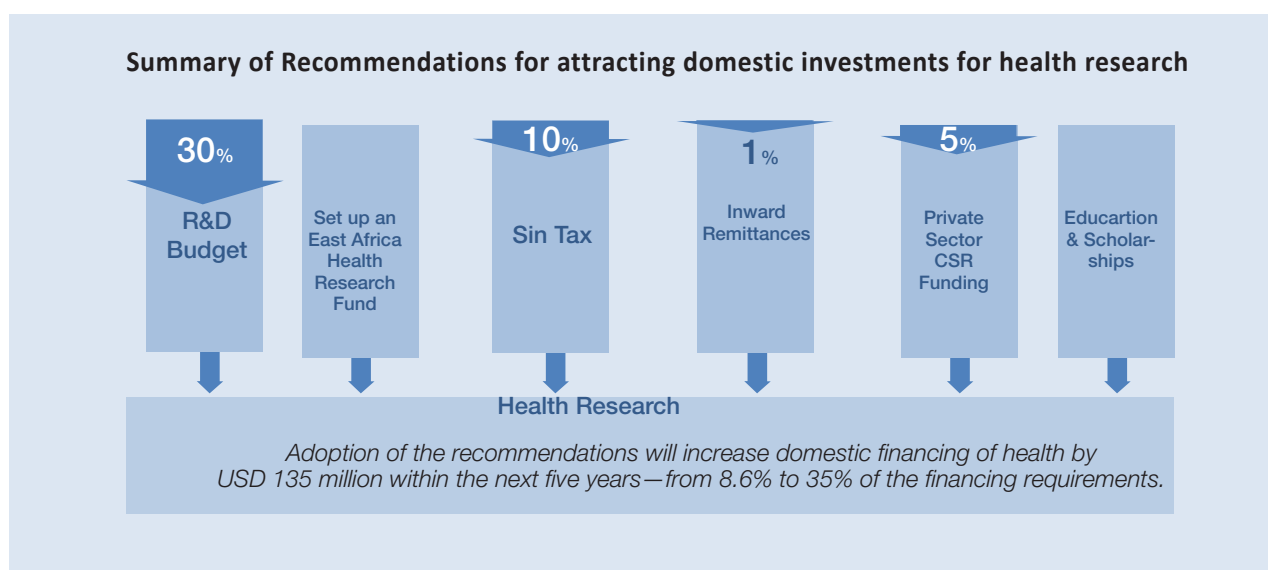
Activity	Milestones	Outputs	Indicators	Means of Verification	Frequency
1. Create a legal framework on the resource allocation from the domestic sources for health research in EAC/PS.					
Conduct consultative meetings with the stakeholders, present the investment case for increasing the domestic health research financing in EAC/PS by creating a legal framework for the resource allocation.	Laws that provide for at least 1.25% of GDP to be allocated to R&D and 30% of which earmarked for health promulgated by July 2021 in all EAS/PS	Laws promulgated by 2021 in all EAC/PS	A number of the EAC/PS with the legal framework for financing health research.	Laws on resource allocation from the domestic source of financing for health research established.	Half Yearly
2. Earmark 10% of the Sin Taxes collected by each of the EAC/PS for health research.					
Develop and present to the stakeholders the position papers that articulate the need and justification for the allocation of a share Sin Taxes for health research.	<ul style="list-style-type: none"> i. Position Paper developed and presented to EAC/PS by December 2018. ii. Laws/regulations for allocation 10% Sin Taxes established by Dec 2019 in all the EAC/PS. 	<ul style="list-style-type: none"> • Position Paper • Resource allocation laws/regulations 	<ul style="list-style-type: none"> • Position Paper • Resource allocation laws/regulations established 	<ul style="list-style-type: none"> • Position Paper • Resource allocation laws/regulations 	Half Yearly
3. Set up East Africa Research Fund with an annual capacity of USD20 million for health research in EAC.					
i. Develop a charter for the fund.	Charter ready in June 2019.	Health research fund charter	Health research fund charter	Health Research Fund Charter	Half Yearly
ii. Network with stakeholders and establish an operational framework.	Clear framework and approvals established by 2019.	Approved framework	Approved framework	Approved framework	Half Yearly
iii. Launch the fund.	A fund with an annual capacity of USD 20 million launched in 2020.	Fund established	Extension of the fund	EAHRF launch	Half Yearly
4. Mobilise at least 5% of the CSR budgets in EAC/PS for health research.					
i. Identify corporate organisations with and present compelling CSR concepts and proposals.	<ul style="list-style-type: none"> i. Identified corporate organisations for partnership March 2019. ii. MOUs established by June 2019 to mobilise at least 5% of CSR budgets in EAC/PS for health research. 	<ul style="list-style-type: none"> • EAC/PS capacity built in fundraising through CSR • MOUs 	<ul style="list-style-type: none"> • Number of MOUs and amount of financing commitments by the corporate organisation • Increase in resources mobilisation. 	• MOUs	Quarterly

Activity	Milestones	Outputs	Indicators	Means of Verification	Frequency
ii. Establish MOUs and implement the CSR activities.	CSR activities implemented	<ul style="list-style-type: none"> Research publications 	<ul style="list-style-type: none"> Number of CSR activities Amount of financing generated 	<ul style="list-style-type: none"> Research publications CSR Activity Reports 	Quarterly
5. Mobilise 1% of the inward remittance by the overseas citizens of EAC/PS into health research by offering bond programmes and encouraging donations.					
i. Network with the citizens in the diaspora and present well-articulated health research programs that clearly demonstrate the development impacts.	Health research projects for support from EAC citizens living abroad identified and networking activities with the citizens in the diaspora conducted.	Regular events for presenting Investment cases for health research and mobilisation of resources.	<ul style="list-style-type: none"> Number of instruments launched Number of campaigns and events 	<ul style="list-style-type: none"> Number of campaigns and events 	Half Yearly
ii. Develop and launch bond programmes for attracting funds from EAC citizens living abroad.	At least one Bond program launched in 2020	Feasibility report	<ul style="list-style-type: none"> Amount of resource mobilised 	<ul style="list-style-type: none"> Financial Reports 	Half Yearly
6. Increase health research financing through education and scholarships to USD10 million annually.					
Establish MOUs with academic institutions and foundations to sponsor scholarships and promote health research.	10% increase in family sponsored health research activities every year till 2020/21.	<ul style="list-style-type: none"> MOUs with academic institutions established. 	<ul style="list-style-type: none"> Number of MOUs with academic institutions. Increase in the number of research scholars. Number of research publications. 	<ul style="list-style-type: none"> MOUs Research publications. 	Annually

8. Conclusion & Recommendations

The total health research investment in EAC/PS in 2014 is estimated at USD 301.71 million, of which the share of domestic financing was USD 43.62 million. In other words, 14.5% of the region's health research is financed from domestic sources and 85.5% by the external sources. The findings show that health research in EAC/PS is dependent on external support. The ratio of total health research financing to the total GDP of EAC/PS stands at 0.21%.

The main sources of financing for health research are the development partners, international research/academic institutions and NGOs. The government is the predominant source of domestic finance. However, there are a number of non-traditional sources that offer the potential for increasing the pool of domestic financing. These include embedding health research into CSR funding, allocating a share of Sin Taxes to health research, creating an East African Health Research Fund and launching social impact bond programmes as well as campaigning for support from EAC citizens living abroad.



9. References

- [1] L. Doyal, "Gender and the 10/90 gap in health research," *Bulletin for the World Health Organization*, vol. 82, no. 3, p. 162, 2004.
- [2] World Health Organization, "WHO's role and responsibilities in health research - Bamako Global Ministerial Forum on Research for Health - Report by the Secretariat," 6 January 2009. [Online]. Available: http://www.wpro.who.int/health_research/policy_documents/bamako_global_ministerial_forum.pdf. [Accessed 27 March 2018].
- [3] World Health Organization, "WHO | Metrics: Disability-Adjusted Life Year (DALY)," 2018. [Online]. Available: http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/. [Accessed 16 May 2018].
- [4] World Health Organization, "Technical brief on the Indicators published on the World Health Organization's Global Health Expenditure Database," [Online]. Available: <http://apps.who.int/nha/database/DocumentationCentre/GetFile/55779731/en>. [Accessed 20 May 2018].
- [5] East African Community, "Protocol on the Establishment of the East African Health and Research Commission (EAHRC)," 13 September 2008. [Online]. Available: https://www.eac.int/index.php?option=com_documentmanager&task=download.document&file=bW-FpbI9kb2N1bWVudHNfcGRmX290enFvSHVLVnFIWXJR-WlpORVFsVkrRNUHJvdG9jb2wgZm9yIHRobzSBFc3RhYmx-pc2htZW50IG9miEVBSFJD&counter=115. [Accessed 27 March 2018].
- [6] Countway Library of Medicine, "What is Health Research? - Participating in Health Research Studies - Research Guides at Harvard Library," 16 November 2017. [Online]. Available: <https://guides.library.harvard.edu/healthresearch>. [Accessed 10 May 2018].
- [7] J. Brumby, "The seven salvos of sin (taxes) | Investing in Health," 25 March 2014. [Online]. Available: <http://blogs.worldbank.org/health/seven-salvos-sin-taxes>. [Accessed 28 March 2018].
- [8] WHO Regional Office for Africa, "Health Promotion: Strategy for the African Region," 2013. [Online]. Available: <http://www.afro.who.int/sites/default/files/2017-06/Health%20Promotion%20Strategy%20inside%20English.pdf>. [Accessed 29 April 2018].
- [9] D. Kebede, C. Zielinski, P. E. Mbondji, I. Sanou, W. Kouvidila and P.-S. Lusamba-Dikassa, "Expenditures on health research in sub-Saharan African countries: results of a questionnaire-based survey," *Journal of the Royal Society of Medicine*, vol. 107, no. 1, pp. 77-84, 2014.
- [10] O. A. Uthman, C. S. Wiysonge, M. O. Ota, M. Nicol, G. D. Hussey, P. M. Ndumbe and B. M. Mayosi, "Increasing the value of health research in the WHO African Region beyond 2015—reflecting on the past, celebrating the present and building the future: a bibliometric analysis," *BMJ Open*, pp. 1-8, 2015.
- [11] The World Bank, "GDP growth (annual %) | Data," 2018. [Online]. Available: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>. [Accessed 31 March 2018].
- [12] The World Bank, "GDP growth (annual %) | Data," 2018. [Online]. Available: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>. [Accessed 31 March 2018].
- [13] The World Bank, "GDP per capita (current US\$) | Data," 2018. [Online]. Available: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>. [Accessed 21 March 2018].
- [14] UNESCO Institute for Statistics, "How much does your country invest in R&D?," [Online]. Available: <http://uis.unesco.org/apps/visualisations/research-and-development-spending/>. [Accessed 2 May 2018].
- [15] United Nations, "Science, Technology & Innovation Policy Review - Rwanda - United Nations Conference on Trade and Development (UNCTAD)," 2017. [Online]. Available: http://unctad.org/en/PublicationsLibrary/dtlstict2017d8_en.pdf. [Accessed 10 May 2018].
- [16] World Health Organization, "Health Product Research & Development Fund: A Proposal for Financing and Operation," 2016. [Online]. Available: http://apps.who.int/iris/bitstream/handle/10665/204522/9789241510295_eng.pdf;jsessionid=73E2B71EB97EA5AFD1E2C1A-335EA296C?sequence=1. [Accessed 28 April 2018].
- [17] The World Bank, "Migration and Remittances Data," October 2017. [Online]. Available: http://www.knomad.org/sites/default/files/2017-10/Remittancedatainflows%28Oct.2017%29_0.xls. [Accessed 7 May 2018].
- [18] the Education Commission, "Ensuring Effective Outcome-Based Financing in Early Childhood Development," December 2016. [Online]. Available: https://www.brookings.edu/wp-content/uploads/2017/01/global_20170118_outcome_financing.pdf. [Accessed 4 May 2018].
- [19] Clinton Global Initiative, "Goodbye Malaria: Mozambique Malaria Performance Bond | Clinton Foundation," [Online]. Available: <https://www.clintonfoundation.org/clinton-global-initiative/commitments/goodbye-malaria-mozambique-malaria-performance-bond>. [Accessed 17 April 2018].

- [20] A. Saldinger, "New innovative finance tools aim to boost eye health care | Devex," Devex, 12 October 2017. [Online]. Available: <https://www.devex.com/news/new-innovative-finance-tools-aim-to-boost-eye-health-care-90561>. [Accessed 26 April 2018].
- [21] R. Atun, S. Silva, M. Ncube and A. Vassali, "Innovative financing for HIV response in sub-Saharan Africa," *Journal of Global Health*, vol. 6, no. 1, 2016.
- [22] Stanbic Bank, Uganda, "Annual Report 2016," 2016. [Online]. Available: https://www.stanbicbank.co.ug/standing/Uganda/fileDownloads/UG_FinancialReport2017.pdf. [Accessed 30 March 2018].
- [23] Tanzania Breweries, "Annual Report 2015," 2015. [Online]. Available: <http://www.ab-inbev.com/content/dam/universaltemplate/ab-inbev/investors/sabmiller/reports/local-annual-reports/tanzania-breweries-ltd-annual-report-2015.pdf>. [Accessed 13 April 2018].
- [24] Safaricom Limited, "Annual Report 2016," 2016. [Online]. Available: https://www.safaricom.co.ke/images/Downloads/Resources_Downloads/Safaricom_Limited_2016_Annual_Report.pdf. [Accessed 15 April 2018].
- [25] Centenary Bank, "Annual Report 2015," 2015. [Online]. Available: <http://www.centenarybank.co.ug/sites/default/files/CB-report-2015%20.pdf>. [Accessed 17 April 2018].
- [26] MTN Uganda, "MTN," 5 November 2011. [Online]. Available: <http://beta.mtn.co.ug/About-MTN/News-Room/2011/May/MTN-Uganda-injects-over-UGX-5.aspx>. [Accessed 18 April 2018].
- [27] Corporate Digest, "GGM INVESTS \$ 4.9 MILLION IN CSR IN TANZANIA - Corporate Digest," 2014. [Online]. Available: <http://www.corporate-digest.com/index.php/ggm-invests--49-million-in-csr-in-tanzania>. [Accessed 22 April 2018].
- [28] Tanzania Revenue Authority, "TRA Quarterly Tax Revenue Collections 2014_15," 2018. [Online]. Available: http://www.tra.go.tz/documents/statistics/TRA%20Quarterly%20Tax%20Revenue%20Collections%202014_15.xlsx. [Accessed 4 May 2018].
- [29] Uganda Revenue Authority, "Revenue Collections 199192_201516," 2016. [Online]. Available: <https://www.ura.go.ug/readMore.do?contentId=99900000000786&type=TIMELINE>. [Accessed 2 May 2018].
- [30] Rwanda Revenue Authority, "RRA Annual Activity Report 2015/2016," 2016. [Online]. Available: http://www.rra.gov.rw/fileadmin/user_upload/rra_annualreport_2015-16_final.pdf. [Accessed 5 May 2018].
- [31] ICPAK, "Kenya's Revenue Analysis," 2016. [Online]. Available: <https://www.icpak.com/wp-content/uploads/2016/10/ICPAK-FISCAL-ANALYSIS-2010-2015.pdf>. [Accessed 8 May 2018].

10. Appendices

Appendix 1: list of Key Informants in the Data Collection Exercise

S/No	Organization
BURUNDI	
1	AMREF Flying Doctors, Bujumbura
2	CARE Burundi
3	East Africa Star University, Rugombo, Cibitoke
4	East African Leadership University of Muyinga
5	East African University of Muyinga
6	Health Finance and Governance Project
7	Institut National de Santé Publique
8	Integrated Health Project in Burundi
9	International Rescue Committee (IRC)
10	Ministry of Education, High Education and Scientific Research
11	Ministry of Finance, Budget and Privatisation
12	Ministry of Public Health and Fight Against AIDS
13	Ministry of Trade, Industry and Tourism
14	National Commission for Science and Technology and Innovations
15	National Ethics Review Committee
16	National Medical Council, Burundi
17	UNICEF Burundi
18	Universite de Mwaro
19	Universite de Ngozi
20	Universite des Grands Lacs in Bururi
21	Universite du Lac Tanganyika
22	Universite Lumiere de Bujumbura
23	Universite Martin Luther King of Bujumbura
25	Universite Ntare Rugamba of Bujumbura
26	Universite Sagesse d'Afrique de Bujumbura
KENYA	
1	Africa Institute For Development Policy (AFIDEP)
2	Africa Medical Research Foundation (AMREF)
3	Africa Mental Health Foundation
4	Africa Population and Health Research Centre
5	Afya Research Africa
6	Agha Khan University
7	AMPATH- Cervical Cancer Screening and Prevention Program
8	Centre for Global Health Research

S/No	Organization
9	CNHR (Consortium for National Health Research)
10	Elizabeth Glaser Pediatric AIDs Foundation
11	Family Aids Care and Education Services
12	Great Lakes University of Kisumu
13	Health Action International-Africa
14	International Centre for AIDS Care and Treatment Programs (ICAP)
15	International Centre of Insect Physiology and Ecology
16	International Development Research Centre (IDRC)
17	Kenya AIDs NGO Consortium (KANCO)
18	Kenya Healthcare Federation
19	Kenya Medical Research Institute
20	Kenyatta National Hospital
21	Kenyatta University, School of Medicine
22	Maseno University
23	Masinde Muliro University of Science and Technology, School of Public Health, Biomedical Sciences and Technology
25	Ministry of Education
26	Ministry of Finance
27	Ministry of Gender, Labor and Social Development
28	Ministry of Health
29	Ministry of Trade
30	Moi University College of Science and Technology
31	Moi University/Moi Teaching and Referral Hospital (AMPATH Project)
32	National Commission for Science, Technology and Innovation (NACOSTI)
33	National Coordinating Agency for Population and Development
34	University of Nairobi
35	Uzima University, School Of Medicine
36	Wellcome Trust Centre For Geographic Medicine Research
RWANDA	
1	Duke Global Health Institute
2	Eagle Research Centre
3	Elizabeth Glaser Pediatric AIDs Foundation

S/No	Organization
4	IMA World Health
5	Institute for Global Health and Infectious Diseases
6	International Centre for AIDS Care and Treatment Programs (ICAP)
7	KIT Health
8	Ministry of Health, Kigali
9	Ministry of Trade, Industry and East African Community Affairs
10	National Rwanda University School of Public Health
11	Project San Francisco
12	Rwanda National Ethics Committee (RNEC)
13	University of Rwanda
14	University Teaching Hospital
15	WE-ACTx
16	Women's Equity in Access to Care and Treat
SOUTH SUDAN	
1	AMREF Health Africa
2	International Centre for AIDS Care and Treatment Programs(ICAP)
3	Kilimanjaro Clinical Research Institute
4	Malaria Consortium- South Sudan
5	Medair
6	Merlin
7	National Institute for Medical Research (NIMR)
TANZANIA	
1	African Academy of Public Health
2	AMREF
3	Catholic University of Health and Allied Sciences
4	Duke Global Health Institute
5	Elizabeth Glaser Pediatric AIDs Foundation
6	Hubert Kairuki Memorial University
7	Ifakara Health Institute
8	Kilimanjaro Christian Medical University College
9	Kilimanjaro Clinical Research Institute
10	Management and Development for Health
11	Ministry of Education, Science and Technology
12	Ministry of Finance and Planning
13	Ministry of Health and Social Welfare
14	Ministry of Health and Social Welfare, Zanzibar
15	Ministry of Industry Trade and Investment
16	Muhimbili University
17	Mwanza Intervention Trials

S/No	Organization
18	National Institute for Medical Research
19	Public Health Laboratory Ivo de Carneri
20	Sokoine University
21	Southern African Centre for Disease Surveillance
22	Tanzania Food and Nutrition Centre (TFNC)
23	Tanzania health Promotion Support
25	The Catholic University of Health and Allied Sciences
26	The Jane Goodall Institute
27	University of Dar es Salaam
28	University of Dodoma
29	We-ACTx
30	Weill Bugando Medical College
UGANDA	
1	Action Group for Health Human Rights and HIV/AIDS
2	African Centre for Global Health Uganda
3	Uganda Virus Research Institute
4	AMREF
5	Baylor Children's Clinical Centre of Excellence, Uganda
6	Bugema University
7	Busitema University
8	Centre for Disease Control
9	Clinton Health Access Initiative
10	Community Health Alliance Uganda (CHAU)
11	Elizabeth Glaser Pediatric AIDs Foundation
12	Finance, Planning and Economic Development
13	Global Health Uganda
14	Gulu University
15	HEPS (Coalition for Health Promotion and Social Development)
16	International AIDS Vaccine Initiative (IAVI)
17	Infectious Disease Institute
18	Infectious Disease Research Collaboration
19	International Centre for Aids Care and Treatment Programs(ICAP)
20	John Snow Inc/ Nupita Project
21	Joint Clinical Research Centre
22	Makerere University College of Health Sciences,
23	Makerere University School of Public Health
24	Makerere University Walter Reed Project
25	Malaria Consortium
26	Mbarara University of Science and Technology

S/No	Organization
27	Medical Research Council
28	Mildmay Centre
29	Ministry of Trade
30	Ministry of Education
31	Ministry of Gender, Labor and Social Development
32	Ministry of Health
33	Mulago Hospital
34	Mulago School of Health Sciences
35	National Chemotherapeutic Research Institute
36	National HIV/AIDS Research Ethics Committee, Uganda
37	Rakai Health Science Project
38	Save the Mothers

S/No	Organization
39	The Aids Support Organization(TASO)
40	Uganda Alliance of Patients' Organisations (UAPO)
41	Uganda Cancer Institute
42	Uganda National Council for Science and Technology
43	Uganda National Health research Organisation (UNHRO)
44	Uganda Research Initiative(URI)
45	UNASO (Uganda Network of AIDS Service Organisations)
46	University Research Co.
47	WHO (World Health Organisation) Uganda

Appendix 2: List of Respondents

Burundi		
S/No	Institution	Respondent
1	National Institute of Public Health, INSP	Director General
2	Integrated Health Project in Burundi	Chief of Party PMTCT Acceleration Project
3	Ministry of Health	Based on Budget Documents
4	University of Ngozi	University Data

Kenya		
S/No	Institution	Respondent
1	Kenya Medical Research Institute	Principal Research Institute Officer
2	AMREF Kenya	Program Manager
3	African Population and Health Research Centre	Executive Director/ Director Research
	Afya Medical Research Institute	Executive Director
6	Centre for Infectious and Parasitic Diseases Control Research	Director
7.	Moi University	Vice Chancellor
8	Kenyatta National Research Hospital	Head of Research Department
9	AMPATH Program (Moi Teaching and Referral Hospital)	Program Manager Director of Research
10	Maseno University	Vice Chancellor

Rwanda		
S/No	Financing Sources	Respondent
1	American Red Cross	Ministry of Health
2	Belgian Government	
3	Canadian Government	
4	Domestic Resources	
5	Elizabeth Glaser Pediatric AIDS Foundation	
6	Emory University	
7	European Developing Countries Trial Partnership	
8	Gardens for Health International	
9	Global Fund	
10	Institute for Reproductive Health	
11	Ireland Government	
12	Millennium Villages Project	

Kenya		
S/No	Institution	Respondent
13	Netherlands Government	Ministry of Health
14	PACKARD Foundation	
15	Partners in Health (PIH)	
16	Spanish Red Cross	
17	Swiss Development Cooperation	
18	The Fred Hollows Foundation	
19	United Nations Population Fund	
20	The United Kingdom	
21	University of Liverpool	
22	US Government	
23	Vision for a Nation Foundation	
24	WHO	

Rwanda		
S/No.	Institution	Respondent
1.	University of Rwanda	Acting University Director of Research, Innovation and Postgraduate Studies
2.	Ministry of Health	Based on Budget Documents
3.	Eagle Research Centre (qualitative data provided)	Director

Tanzania		
S/No	Institution	Respondent
1	Muhimbili University	University Data
2	Kilimanjaro Clinical Research Institute (KCRI)	Director
3	National Institute for Medical Research	Director of Finance, Human Resource and Planning Principal Research Scientist(Clinical & Laboratory Research)/ Acting Director for Research Coordination
4	Kilimanjaro Christian Medical University College	Senior Administrative Officer
5	Public Health Laboratory Ivo de Carneri	Chief Executive Officer
6	Ifakara Health Institute	Director of Science

Uganda		
S/No	Institution	Respondent
1	Infectious Disease Research Collaboration	Executive Director/ Chair of SMT Administrative Manager
2	Infectious Disease Institute	Head of Research
3	Baylor Children's Clinical Centre Of Excellence	Director
4	Elizabeth Glaser Pediatric AIDS Foundation	Country Director
5	The AIDS Support Organisation	Executive Director
6	Makerere University School of Health Sciences	Head of Department
7	Community Health Alliance Uganda (CHAU)	Program Specialist Sexual and Reproductive Health / HIV
9	International Centre for AIDS Care Treatment Programs	Country Representative
10	Action Group for Health Human Rights and HIV/ AIDS	Executive Director

S/No	Institution	Respondent
11	Busitema University, Faculty of Health Sciences	Dean of Faculty of Health Sciences
12	Coalition for Health Promotion and Social Development	Program Manager
13	Joint Clinical Research Centre Limited	Head of Clinical Research
14	Uganda Virus Research Institute	Director
15	Makerere University Walter Reed Project	Director of Finance and Administration
16	Anonymous (University/ School)	Dean of Faculty
17	Ministry of Health, Uganda	Director General
18	Uganda National Council for Science and Technology	Head, Research for Development and Technology
19	Makerere University School of Public Health (Provided qualitative data)	Dean of School of Public Health
20	Other Research Institutions	Desk Research

Appendix 3: Exchange Rate Against Us Dollar

Year	Kenya (KSH)	Burundi (Francs)	Rwanda (RWF)	South Sudan (SSP)	Tanzania (TSH)	Uganda (UGX)
2017	100.2321	1685.170	819.15	74.1	2187.58	3617.44
2016	102.305	1561.399	747.69	19.6	2155.60	3392.09
2015	90.6266	1558.850	689.00		1735.20	2764.33
2014	86.3977	1546.493	676.00	5.053	1585.50	2525

Note: Rates as per 1 January of the year

Appendix 4: Health Research Financing Vs. Actual Amount Required

Organisation	Requirement (USD)	Financing Received (USD)
BURUNDI		
Health Research (Gov.)	44,090	19,181
Integrated health Project	873,845	832,169
University of Ngozi	1,051,600	790,600
National Institute of Public Health	147,304	147,304
Sub Total (BR)	2,116,839	1,789,254
KENYA		
Kenya Medical Research institute	105,582,096*	95,983,724
African Population and health research Centre	8,000,000	16,100,000
African mental Health foundation	3,000,000	
AFYA Research Africa	2,000,000	1,500,000
AMPATH Programme (Moi Teaching and Referral Hospital	52,010,899	31,498,559
Maseno University	30,894,370	304,108
AMREF	45,000,000	2,205,000
Kenyatta National Referral Hospital	5,000,00	1,000,000
Agha Khan University	25,000	
Moi University	2,000,000	5,000
Centre for Infectious and Parasitic disease control Research	1,500,000	25,000
Sub Total (Kenya)	250,012,365	148,621,391
RWANDA		
Rwanda (Entirely)	25,420,000**	5,934,381
Sub Total (Rwanda)	25,420,000**	5,934,381
TANZANIA		
Muhimbili University	7,187,113	7,187,113
National Institute for medical research	17,780,996	16,439,109
Kilimanjaro Christian university college	25,000	25,000
Kilimanjaro clinical research institute	960,400	800,410
Ifakara Health Institute	25,000,000	15,000,000
Public Health Laboratory	230,000	155,000
Sub Total (Tanzania)	51,183,509	39,606,632
UGANDA		
Anonymous University/School	39,032,116	34,456,479
Makerere University Walter Reed project	13,324,441	8,718,183
Ministry of Health	11,453,465	9,555,643
The Aids Support Organisation	3,192,866	2,902,605
Makerere University School of Health Sciences	10,000,000	500,000
Community Health Alliance Uganda	50,000	30,000
Infectious Disease Institute	7,141,000	4,643,583
ICAP (International Centre for AIDS Care Treatment Programs)	4,500,000	4,500,000
Action Group for Health Human rights and HIV/AIDS	112,320	36,492
Busitema University Faculty of Health Sciences.	200,000	50,000

Organisation	Requirement (USD)	Financing Received (USD)
Coalition for Health Promotion and Social Development	594,059	396,039
Joint Clinical Research Centre	10,000,000	8,700,000
Uganda Virus Research Institute	24,027,028	18,482,329
Uganda National Council for Science and Technology	250,000	173,317
Baylor Children's Clinical Centre of Excellence	3,903,398	3,903,398
Infectious Disease Research Collaboration	6,299,349	6,299,349
Elisabeth Glaser Pediatric AIDS Foundation	1,604,395	1,604,395
Other Research Institutions	809,802	809,802
Sub Total (UG)	136,494,239	105,761,614
Total	468,149,777	301,713,272

*Extrapolated using the current level of financing and the trends of the sample.

**As the data was limited, requirements estimated using the minimum level of financing stipulated by Bamako Call

Appendix 5: Financing Requirement Based on the Bamako Call

Financing Requirement Per Country (USD Million)

Countries	Government	Development Assistance	Total	Financing Requirement
Burundi	84.00	125.32	209.32	7.95
Kenya	1289.10	1,137.31	2,426.41	250
Rwanda	281.50	395.84	677.34	25.42
Tanzania	1,001.58	1,140.01	2,141.59	77.03
Uganda	474.05	800.86	1,274.91	136.5
TOTAL	3130.23	3599.34	6729.57	496.9

(Source: Financing Global Health 2016, Development Assistance, Public and Private Health Spending for the Pursuit of Universal Health Coverage IHME)

Appendix 6: Impact Bonds and Other Innovative Financing Solutions

<p>1. South Africa ECD Impact Bond Innovation Fund: The Departments of Social Development and Health of the Western Cape province of South Africa committed in March 2016, South African Rand 25 million (USD 1.62 million) in outcome funding for three social impact bonds (SIBs) for maternal and early childhood outcomes [18].</p>
<p>2. The Mozambique Malaria Performance Bond: Nandos, the restaurant chain joined a public-private partnership that designed the Mozambique Malaria Performance Bond (MMPB), a development impact bond (DIB) which aims to address the funding gap for malaria interventions by increasing funding and efficiency for malaria interventions through a pay-for-performance mechanism. Nandos made a Commitment of USD 1.5 million. It will achieve this goal through a structure of sharing risk and returns across a range of stakeholders including public and private funders, impact investors, and health implementing organisations; and a performance-based approach for NGOs implementing the malaria program that ties payment to impact outcome targets [19].</p>
<p>3. The Cameroon Cataract Development Impact Loan: Launched in 2017 with the aim of delivering 18,000 cataract surgeries over five years in Cameroon. The DIB hopes to meanwhile improve the country's local capacity and skills to address eye care problems [20].</p>
<p>4. Zimbabwe's AIDS Trust Fund: Zimbabwe's AIDS Trust Fund, A tax/levy-based instrument, generated USD 52.7 million between 2008 and 2011 [21].</p>
<p>5. Botswana's National HIV/AIDS Prevention Support: International Bank for Reconstruction and Development: Buy-Down (a debt conversion instrument), Botswana's IBRD Buy-Down generated USD 20 million [21].</p>
<p>6. Côte d'Ivoire's Debt2Health Debt Swap Agreement: Côte d'Ivoire's Debt2Health Debt Swap Agreement generated USD 27 million, at least half of which was to be invested in HIV/AIDS programs [21].</p>

Appendix 7: Examples of Corporate Social Responsibility Investments

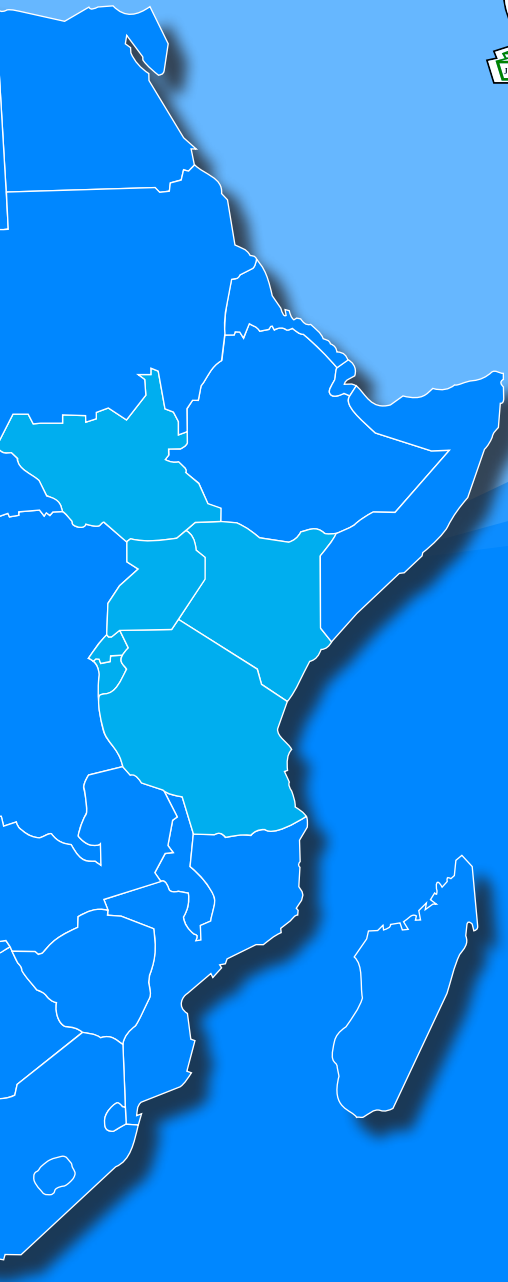
	Kenya		Rwanda		Tanzania		Uganda	
	Company	Amount	Company	Amount	Company	Amount	Company	Amount
1	Airtel	115,744	MTN	147,929	Geita Gold Mine	428,887	Stanbic Bank	448,713
2	Communications Authority of Kenya	370,380	Development Bank of Rwanda	162,554	Tanzania Postal Bank	78,209	Centenary Bank	377,030
3	Barclays Bank	162,041	National Bank of Rwanda	1,015,965	Acacia Mining	8,500,000	MTN	396,040
4	Kenya Commercial Bank	1,157,438			Tanzania Breweries	1,210,234	Mukwano Group	99,010
5	UAP Old Mutual	35,450					Uganda Baati	99,010
6	Britam Insurance	33,102					Nile Breweries	93,069
7	Safaricom	3,696,486					Eskom Uganda	44,356
	TOTAL	5,570,641		1,326,448		10,217,330		1,557,228

Note: All amounts in USD. Data from: [22], [23], [24], [25], [26], [27].





EAST AFRICAN HEALTH RESEARCH COMMISSION



East African Health Research Commission (EAHRC)

The East African Community (EAC) is a regional intergovernmental organization whose mission is to widen and deepen economic, political, social and cultural integration in order to improve quality of life of the people of East Africa, through increased competitiveness, value added production, trade and investment. The countries that form EAC are the Republic of Burundi, Republic of Kenya, Republic of Rwanda, Republic of South Sudan, Republic of Uganda and the United Republic of Tanzania.

As the East African Regional Economic Community (REC), the EAC co-operates, negotiates, and collectively determines legislation and policy that are legally binding at national and regional level.

The vision of EAHRC is high quality health research for improvement of health and wellbeing of the people of East Africa. The mission of EAHRC is to coordinate, conduct, and promote the conduct of health research in the region, and source, gather and disseminate findings from research for policy formulation and practice.

“Health is Wealth”: EAHRC focuses on improving health of the citizens of EAC as a tangible approach towards poverty eradication.

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