POLICY BRIEF

KNOWLEDGE PRODUCTION FOR DEVELOPMENT IN AFRICA:

HOW SHOULD POLICY MAKERS RESPOND?

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INTRODUCTION

The importance of the research-policy nexus in promoting social and economic development has been explored in academic literature. Examples of the positive impact of research informing development can be found in some high-income countries, including the United States of America (US), the Netherlands, Romania, New Zealand, and the United Kingdom (UK) (Nutley, et al 2002; Glukman 2013; Harris 2015; Haas and Kwaak 2017). A distinguishing feature within these contexts is that the potential for research to contribute to development is both recognised, valued and financially supported.

Although research-informed policy development is not the norm in Africa, there are examples where the research-policy nexus is functioning effectively. In some countries - including Ghana, Sierra Leone, Uganda, Zambia – the literature points to a "relatively high" use of evidence in policy debates (Broadbent 2012). In addition, this study findings show that there is a system in place in Kenya that ensures the conversion of research outcomes to tangible results useful for the betterment of all.

Despite the important role research could play in informing policy, African governments grapple with competing social needs that make funding research at adequate levels almost impossible. As funds from domestic Science Granting Councils (SGCs) became grossly insufficient over the years, the lacuna in research funding is mostly filled by foreign development agencies who step-in to fund research targeted at areas of common concern (Mouton, Gaillard &Lill 2014; Tijssen & Kraemer-Mbula, 2018; Chataway, et'al. 2019). The focus of this work, therefore, is to investigate the governance structures and relationship dynamics within and between SGC management staffs and other relevant bodies. The knowledge generated could reveal the trending strategies, challenges and windows of opportunities underneath these structures and relationships for accessing funds for research.

Understanding the challenges

In countries where the research–policy nexus is effective and strong, significant funding is dedicated to such and research councils are established to manage the funds. There are several examples of well-established research councils in contexts where the research policy nexus is well established - these include the European Research Council (ERC), the Economic and Social Research Council in the UK, the National Institute for Educational Planning and Administration (NIEPA) in India, etc.

Limited funding made available by African governments continues to negatively impact research activities and outcomes, which impedes African states' development. However, there has been instances where leaders have signalled the importance of funding research at the right levels. The 1980 Lagos Plan of Action is one such example, where a call was made to all African states to spend 1% of their gross domestic product (GDP) on research and development (R&D) – also referred to as GERD – a target which no African state has been able to meet.

There are competing needs the African leaders have to address and resources are limited. It is in this context that politicians opt to invest in areas and sectors where the results are immediately visible to their constituencies. With research, in particular, basic research tend to be perceived as a luxury for scholars since its utility is not direct or immediately visible

Challenges associated with research-based policy in Africa

In Africa, the challenges inhibiting the adoption of research-based policy approaches are complex. A commonly cited problem is that policymakers are provided with large volumes of information daily, but have very little time to read, absorb and assimilate relevant information. Another issue raised is that politicians or decision-makers are unaware of the availability of policy-relevant research, or, when they are aware of the research, they are reported to be dismissive, unresponsive, incapable of using research or politicise the evidence, and results are either not utilised or utilised wrongly (Bailey, 2010:20&22).

A recent study by Lugo-Gil, Jean-Baptiste & Jaramilo (2019) identified several challenges related to utilising research for policy. One challenge is that the researcher's questions, timelines, and objectives do not always align with those of decision-makers'. Few researchers and decision-makers work to establish mutually beneficial relationships that could inform aligning timelines and priorities. Furthermore, research conducted in academia often fails to address the questions that programme and policy decision-makers want answered. Many research findings are not presented in an accessible manner to non-experts, and the products created do not meet the information needs of decision-makers. Finally, linking research to decision-making can be resource-intensive and some government agencies and the academic community possess limited capacity to bridge this complex nexus.

Research funding challenges in Africa

In line with African Union Development Agency (AUDA - NEPAD) objectives and the Lagos Agreement, many African governments have committed themselves to increasing their GERD. The implementation of these agreements by African countries has however to date been rather slow, inconsistent and in some cases non-existent.

A study by Mouton, Gaillard & van Lill (2014) found that the target set for Africa, namely, to increase GERD to 1%, remains elusive with the average expenditure on R&D at the time of study being 0.3% - 0.4%. Several years later, the situation has improved but the target has not been reached.

Table 1 shows the available data on government allocation of the GDP on education, higher education and research in four (4) African states used as locale for this study in a comparative manner.

COUNTRY	EDUCATION (%)	HIGHER EDUCATION (%)	RESEARCH (%)
BOTSWANA	9.6% (2009)	42% (2009)	0.54% (2013)
COTE D I'VOIRE	5.1% (2017)	14% (2018)	0.09% (2016) 0.37% (2021)
KENYA	5.272% (2017)	13.1% (2015)	0.786% (2010) 0.8% (2021)
ZAMBIA	1.1% (2008)	26% (2005)	0.28% (2008) 0.6% (2021)

Source: Compiled by the authors from different reports

The table indicates that none of the four countries selected for the study has fulfilled its commitment of dedicating 1% of GDP to research.

The experiences of researchers across the continent reflect this lack of funding. According to Mgaiwa (2018), in Tanzania, government approval rates for budgetary requests from universities decreased between 2010/2011 and 2015/2016. In Uganda, studies have "revealed that research is grossly underfunded" (Kyaligonza, Kimoga & Nabayego, 2015). With the pandemic that started in 2020, research budgets in countries like South Africa were cut and believe that might have been the case in many other African countries.

The inadequate funding of research in Africa by African states has created a gap which, to a degree, has been filled by foreign funders, donors, governments and jointly owned organisations such as African Capacity Building Foundation (ACBF), the African Economic Research Consortium (AERC), the Global Development Network (GDN) and the Secretariat for Institutional Support for Economic Research in Africa (SISERA) (Bailey 2010).

We could therefore submit that circumventing these challenges together with leadership deficiencies/ malfunctioning has been the determinant of the trajectory of the relationship between research and policymaking. This has been identified by some SGCs, scholars and funding agencies and in addressing this challenge, the Science Granting Council Initiative was birthed by 15 African states to bring SGCs together to learn from each other and strengthen each other whilst operating with limited funding levels.

Science Granting Councils (SGCs) in Africa

As science, technology and innovation began to attract national and continental attention from governments and states (SGCI, 2021; Chataway et al., 2019; SGCI, 2017), increased funding and establishing platforms for such endeavours through SGCs have been noted (Tigabu & Khaemba, 2020; Khaemba, 2018). Several nations, with a view to solving developmental issues and concerns, set up SGCs to promote scientific research.

SGCs and equivalent bodies are in different stages of development in Africa. While those in South Africa, Tanzania, Kenya and Zimbabwe are well established, others in countries such as Namibia, Botswana and Mozambique are in their infancy. Those in Francophone countries such as Burkina Faso, Senegal and Cameroon are also recent and less well-established (Morton, Gaillard & Lill, 2015) with the exception of Cote de Ivoire where the SGC is now well established.

In a bid to strengthen the capabilities of these SGCs and enhance an integrated approach to continental development, the Science Granting Council Initiative (SGCI) was formed in 2015 to network15 SGCs in Sub-Saharan Africa (SSA) as a five-year project. The SGCI project is a multi-lateral initiative funded by various organisations such as the International Development Research Council (IDRC), Canada, the United Kingdom's Department for International Development (DFID), UK, and the National Research Foundation (NRF), South Africa (Hanlin, 2020; SGCI, 2017). Fifteen countries are participating in the initiative: Rwanda, Kenya, Uganda, Tanzania, Ethiopia, Cote d'Ivoire, Burkina Faso, Senegal, Ghana, Zambia, Zimbabwe, Mozambique, Malawi, Namibia, Botswana, and Cameroon (SGCI, 2021). The SGCI initially set to operate for 5 years continues to operate and additional resources have been provided by the funding agencies.

Since the establishment of the SGCI, considerable developments have been tracked in member countries, although progress made individually varies by context. Progress made could be credited, at least in part, to the shared peer-learning platforms facilitated through the SGCI at annual meetings where best practices are shared. According to recent data, the SGCs in Botswana, Uganda, South Africa, Burkina Faso, Zambia, Mozambique and Malawi have made considerable progress in enhancing partnerships and collaborations with other countries and the private sector to promote innovative research and incorporate the general society to research efforts (Tigabu & Khaemba, 2020; Khaemba, 2018). Uganda has been particularly noted for the facilitation and deployment of software for online research, while countries like Ghana have been reported to be focused on establishing a research funding facility.

About the study

This project adopted a qualitative research model using a phenomenological case study approach. Primary data was collected qualitatively using key informant interviews. Informants interviewed were selected conveniently and purposively from SGC staff and governing boards in four (4) African states. For Southern Africa: the Department of Tertiary Education, Research, Science and Technology (DRST) in Botswana and the National Science and Technology Council (NSTC) in Zambia. For West Africa: Strategic Support for Scientific Research Programme (PASRES) in Cote d'Ivoire, and the National Research Fund (NRF) in Kenya for East Africa. These countries were selected to represent the three regions of the SGCI and a mixed sample of both independent SGCs and those located within a government department.

Data collection faced challenges due to the COVID-19 restrictions on travel. However, as an alternative, online meetings were scheduled via Zoom. Where necessary, follow-up was done via email.

Across the four participating countries, 3 CEOs, 1 board representative, 1 government representative, and 3 administrative staff participated in the interviews. This group included 3 females and 5 males.

Interviews were supplemented by document analysis including articles, reports and publications of the SGCI, SGCs in various countries and the NRF South Africa, as well as scholarly journals.

Relevant discussions from the existing literature were extracted on themes such as the research-policy nexus, challenges confronting research-based policy in Africa and the challenge of funding for research in Africa. Equally, cogent points germane to this study were extracted from the interviews specifically on SGCs in the countries selected for the project.

Recommendations

There are six akey recommendations for policy emerging from the study.

1.Research priorities and development plans

Recommendation: Countries need to set up independent SGCs that would serve as a buffer body between researchers and government so that they can fully fulfil their research and development mandates. Again, those already established and yet to be independent need to speed up the process of being independent agencies for effectiveness.

The study found that, in the participating countries, research priorities are being informed by national development plans as well as regional and continent-wide development agendas.

[1] Botswana does not have a SGC structure but the research activities are managed from the Department of Tertiary Education, Research, Science and Technology

Box 1: Examples of influence of development plans on national research priorities

The Steering Committee of Programme d'Appui Stratégique à la Recherche Scientifique (PASRES) in Cote d'Ivoire gives guidance to the other two agencies, namely, the Scientific Council and Executive Secretariat in terms of priorities at the sub-regional level, i.e. ECOWAS and national level as well. Kenya is addressing her bigger vision 2030 that includes the commonly referred to goals as The Big Four Priority areas, namely food security, universal health coverage, manufacturing, and housing. Their priorities are also informed by the Sustainable Development Goals (SDGs), and of course the African Union Agenda 2063.

In Zambia the Council developed a 5-year strategic plan which is guided by the 7 National Development Plan (7NPP) and the Vision 2030. This 7 NPP and Vision 2030 is aimed at developing a country driven by science, technology and innovation. The challenge, however, is in the use of research information for policy that addresses national development.

In Botswana, in the absence of an SGC, different ministries set their own priorities based on the national development plan and use their own funds to support research. These efforts are coordinated through the Botswana Joint Committee.

One of the challenges mentioned often was that there was no direct link between research and development, and that policymakers are mostly interested in showing tangible outcomes of research to justify continued funding.

One of the key issues that the project focused on was understanding governance structures and their modes of operation to explore informed strategies for unlocking more funds for research and innovation. The data available indicates that the establishment of a Science Granting Council with responsibilities of disbursing funds seems to have led to governments allocating more money for research. Although none is yet to meet the 1% target, progress is being made towards achieving the goal.

In all, there is also overall coordination in making sure that Africa's development agendas are addressed in a more efficient way that would avoid wastage and duplication. In order to advance the development agenda on the continent, the African Union established the Science Technology and Innovation Strategy for Africa (STISA) in 2014. This sets out a 10-year plan for the continent to mainstream science and technology into plans for Africa to reach the Sustainable Development Goals of 2030. The strategy serves as a guide for mainstreaming science and technology into development plans and supported through research in individual countries. All SGCs sampled are making conscious efforts towards establishing the necessary partnerships to make sure that STISA's mandate is achievable in their respective countries.

2. Promoting dialogue between development funders and SGCs

Recommendation: Development funders and SGCs need to engage each other to ensure that national priorities are clearly stated, while funders bearing these in mind can align such priorities within their organizational mandates.

Development funders continue to play a significant role in setting the research priorities in the countries participating in the study. This is the situation because of the limited funding available in the four (4) countries, thus making researchers align their research focus with the research priorities led by the funders. All SGCs affirmed this assertion. Profound is the assertion from Botswana, which noted that the majority of the funding for research comes from external sources and partners with priorities already set by them. Although these set priorities are targeted towards producing knowledge for the development of the country, the governments and research institutions are not involved in the process of establishing them.

3. Governance Structures and Interactions

Recommendation: Support should be provided by African governments in other countries participating in the SGCI for further studies to evaluate the governance structures of the SGCs as well as to assess progress on the implementation of the 10-year STISA.

Another finding in understanding the governance structures and interactions between role players was that there were various models in place that were well coordinated. For example, PASRES in Cote d'Ivoire and NSTIC in Kenya have three main entities that communicate regularly. The former even had a common officer sitting in all three entities. For the latter, the CEOs of all three entities sat in each other's meetings for collaboration. For Zambia, coordination was achieved by having the CEO serving in the interim in the dual role as Secretary of the Council and Secretary of the Technical Committee of the Board, while they were still in transition. In Botswana, coordination was achieved through the Joint Botswana Committee. Also, being the only dependent SGC in this study, its functions are performed by a government department located in the Ministry of Tertiary Education, Research, Science and Technology.

4. Platforms for shared learning between SGCs

Recommendation: Continued opportunities for research collaboration and engagement and peer-learning between SGCs on the continent should be encouraged. Such platforms create the opportunity for sharing experiences, best practices and learning from each other's challenges to enable the development of all SGCs and above all, pulling resources together for joint projects.

There was evidence of resource sharing through joint projects across national borders to address common agendas, as well as Africa related agendas. Examples are the joint work between Botswana and Zimbabwe, funded by a third party (the NRF in South Africa) and the establishment of the Botswana Joint Committee (BJC) initially established to manage its relationship with South Africa. Other partnerships were between an SGC and the development agency, as was the case with PASRES and the government of Switzerland, which signed a scientific cooperative agreement in 2006 and have a Swiss representative on their Council

5. Valorisation of Research Products

Recommendation: There should be encouragement for the valorisation of research to enhance the usability of its products. This would make the value added by research visible and the likelihood of unlocking more funds for research and innovation.

The SGCs are aware that the non-valorisation of research products poses a major challenge to research and innovation funding in on the continent. This corroborates existing literature, vis-à-vis research funding in Africa. This is because politicians and policymakers who are at the helm of affairs and control the state's resources want to see research products that would have a positive impact on its citizens. When this is lacking, they are not encouraged to provide adequate funding for research purposes. Currently, there is a deficit of this that needs to be addressed by the SGCs.

It is fundamental to note that both applied and basic research are germane to the development process. In other words, not all research would be policy oriented although, they all bring about innovation in the long run. As such, politicians and policymakers should be made aware of this for a better sense of judgement when it comes to funding research and an understanding that basic research is part of the value chain.

A strategy that has been adopted in Kenya and Zambia is to establish a unit for the valorisation of research. Kenya already has a unit that valorises research products called the Kenya National Innovation Agency (KENIA). Zambia is in the process of making sure that research products are utilised for the public by learning from what other SGCs are currently doing. In Botswana, there is an initiative for public engagement and information dissemination to get research to benefit the economy and society at large. There is an ongoing process to develop a science and communication strategy. For example, radio is being used for research dissemination by addressing issues of interest to the community. There are increased efforts to showcase research products with the hope of encouraging funding for upscaling and for others to benefit from the work produced.

6. Public-Private Partnership

Recommendations: The challenges Africa faces are daunting, and no single partner can tackle them alone. Partnership remains a key strategy for increasing research funding in Africa. SGCs need to go into partnership arrangements with the private sector and development agencies for funding research as well as for the production of research that would address some of the top priorities of the government. It should be noted that the private sector is profit oriented and as such, the governments should explore different incentives that would easily lure the private sector to the dialogue table.

The study found varying diversity in the scope, scale and maturity of engagement between SGCs and the private sector. Kenya has already started engaging the private sector and also funds research that is carried out in the private sector which cuts across different industries.

For both Botswana and Zambia, progress was being made to involve the private sector in its activities with the hope that the private sector will contribute funds for research.

Botswana is starting to consider the involvement of the private sector in funding research, and they attribute this to their participation in the SGCI and financial support received during the initiative. One challenge raised was that most of the private sector and industry in Botswana are predominantly subsidiaries of entities outside of Botswana, who only offer services and products produced elsewhere and imported into the country as such they do not have a strong presence that could be explored in the country. However, there are local business partners that could be involved.

In Kenya, strong partnerships exist with the private sector. The NRF currently provides funding for researchers in the private sector as well. The Big Four Priority areas, namely food security, universal health coverage, manufacturing, and housing, are funded through public funds and privately raised funds are used to support other identified priorities. There are expectations to raise additional funding from the private sector, as the sector is represented on the Board of the NRF.

In Zambia, the Council partners with the private sector by organising joint activities. Yearly, the Zambian Science Conference is organized and a central theme jointly developed with its partners in areas such as agro-processing, livestock, etc. There is also an MOU underway with the Zambian Association of Manufacturers (ZAAM) aimed at collecting information on investment by the private sector in their own research to generate value-added products and, second, to utilize ZAAM to attract industries which will begin to fund research.

To achieve this, the Council has decided to initiate tax incentives as a tactic to draw the industry close.

The NRF in South Africa provides a model which other SGCs could adopt. In it, the NRF spells out a strategy for being responsive to industry needs, mobilising resources, and promoting joint programming.

Box: NRF South Africa approach to public-private partnerships

NRF South Africa continues to be a model which many SGCs tend to adopt.

This Council has an articulated plan for effective partnership with the private sector. The NRF–Industry strategy aims to focus on supporting and promoting innovative research and human capacity development programmes that involve long-term partnerships with industry and research institutions. This is aimed at increasing the responsiveness of the organisation to industry needs, mobilising resources and enhancing joint programming that promotes social and economic development.

Conclusion

This project provided a new lens for examining the nexus between research and policy by identifying the interactions between role players, research funding, management and use for policy. Equally, the challenges in the interactions within the specificity of the African context were identified, and pragmatic solutions suggested in tackling these identified limitations.

In addition, it suggests the need to measure the value of research by the impact it makes on society, and also value basic research for its possible long-term impact.

These are opportunities to explore the leveraging of funds through collaboration with other science councils where more than one SGC exists as is the case in South Africa.

Lastly, it also suggests the need to increase research funding for countries to participate in the knowledge economy.

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