



Accessing quality research to enable evidence-informed national policy: experiences from Zimbabwe



By Willie Ganda

Willie Ganda is Director for Research Development and Innovation, Ministry of Higher and Tertiary Education, Science & Technology Development, Zimbabwe.

Location: *Zimbabwe*

What we know: Evidence-informed national policies and implementation plans are necessary to achieve global targets such as the Sustainable Development Goals.

What this article adds: Research output in Africa lags well behind Europe. Challenges to cutting-edge research in the continent include: lack of funding (it is not a priority for budget decision-makers); poor investment in education to PhD level (basic education is prioritised); skills migration to overseas institutions; and limited international collaboration, especially in research innovation and design. These factors are compounded by expensive and limited internet connectivity; reliance on external donors for research infrastructure, which undermines national 'buy-in' to research; and little demand from policy-makers on research needs. Low capacity of researchers to communicate findings simply and of policy-makers to interpret research hamper evidenced policy development; collaboration between these communities is largely poor. Actions needed include development of a tier of PhD researchers; harnessing and attracting researcher diaspora; innovating through information and communication technologies to harness global skills; and establishment of local repositories for refined research outputs and policy briefs to help bridge the research/policy divide.

Introduction

The lack of cutting-edge research, as well as a lack of evidence-informed policy-making, are major hindrances to development in Africa. If Africa is to deliver its obligations under the Sustainable Development Goals (SDGs), it will need to develop and utilise cutting-edge research as an enabler. This article explores the experiences of and challenges to high-calibre national research and the challenges of evidence-informed policy development in Zimbabwe.

Status of research in Africa

The status of research in Africa is far from satisfactory. From 2005 to 2010, the average research output per capita per million people for the surveyed countries was 33.65 papers. Excluding South Africa, the output falls to 25.68 papers per capita per million people. The research situation across Africa is mirrored in Zimbabwe. The per capita research and development (R&D) output per million residents for Zimbabwe from 2005 to 2010 was 25.0 (NEPAD, 2014). This output represents a decline of 2% attributable to the economic challenges that the country

has continued to face and subsequent skills migration in many areas. This contrasts starkly with an output of over a thousand papers per million residents for many countries in Europe.

The total research output from Africa reflects the unhealthy state of research on the continent. Africa's total research output (NEPAD, 2014) of publications between 2008 and 2010 was 106,825, a mere 1.96% of a total world output of 5,436,451. Putting this in a global perspective, Africa has a population of 1.2 billion people, about 16% of total world population. Even more worrying is the quality of research output. According to the same report, the impact of research output by African countries, measured by journal of publication impact factors, is below world average in most fields, except for historical studies (above world average), and engineering and public health and health services (world average).

Challenges to cutting-edge research in Zimbabwe

Like most African countries, Zimbabwe faces diverse but interrelated challenges in the area of research; below are some of the most pertinent.

Lack of funding

The major primary cause of low research output in Zimbabwe (and Africa generally) is funding. During the post-independence period, most African countries invested heavily in basic education. Despite a commitment by African governments to allocate at least 1% of gross domestic product (GDP) to research, no country has reached that minimum threshold. Zimbabwe's expenditure on R&D in 2010 was only US\$24 million – about 0.254% of GDP (NEPAD, 2014). Closer scrutiny of this expenditure shows that the bulk is accounted for by salaries of fulltime equivalent staff in universities and research institutions for research-related activities.

Through the provision of free basic education, most African countries were able to build a critical mass of relatively well-educated populations in terms of basic literacy. Typically, education (basic) and health sectors get the largest share of national budgets; those allocating resources often question specific allocation on research. As long as research remains a low priority for African governments, it is impossible to expect meaningful R&D output that would make a difference locally, regionally and globally.

Skills capacity of researchers

In order to carry out cutting-edge research, researchers need to have the appropriate skills at the highest possible level. At the basic level, a country needs a good stock of researchers with PhD-level education. While Zimbabwe has a relatively good stock of these, the last 15 years have witnessed significant skills migration as the most skilled researchers moved to other countries in search of better opportunities. The 2013 survey ((NEPAD, 2014)) indicated that only one of the top 500 researchers in Africa was from Zimbabwe; though contested by Zimbabwean researchers, the skills drain across many key sectors is indisputable. The Zimbabwe country survey confirmed that only 13.23% of staff working in R&D had PhDs: 68.2% had first-stage theoretical and practical tertiary education (degree); the remainder had other, non-tertiary qualifications. This situation is clearly undesirable from a skills perspective; ideally the majority should have PhDs.

Rapid changes in technology have compounded the problem by rendering certain skills obsolete. Research equipment, for example, has become more sophisticated and has been digitally transformed, with less human manipulation required in scientific processing and presentation of results. The arrival of supercomputers has vastly changed the research domain, giving new capabilities unimaginable a couple of years ago. The inability of researchers to upgrade their skills and keep up with the times has also rendered some supposedly skilled people irrelevant in the current environment.

Limited international collaboration

One of the key features of today's globalised research enterprise is international collaboration. Globalisation of research enables researchers to be part of international research networks that can access resources that are highly competitive as funders increasingly demand credible return on investment. The inability to provide the skills and necessary infrastructure has limited the extent to which Zimbabwean researchers can collaborate internationally. Compounded by perceived high-country risk, Zimbabwe has, over the years, suffered a sharp decline in international research collaborations. Current work has been limited to tail-end collaborations in clinical research trials, mainly in the area of health and some in agriculture. This situation has created a serious skills gap in most segments of the research value chain and has not aided in giving the country the requisite skills to participate in the value chain of own vaccines or drugs discovery, for example.

Poor infrastructure

In order to carry out meaningful research, researchers need the appropriate infrastructure. Like most African countries, since independence Zimbabwe has faced the persistent problem of poor or obsolete research infrastructure. This is largely a product of perennial underfunding of research, compounded by donor-dependence syndrome. It is likely that much infrastructure in research institutions in Zimbabwe came through donations and there is a long-entrenched culture that academic institutions approach donors for good research infrastructure. The role of donations in building research infrastructure is of course welcome, but without equal if not greater commitment to building infrastructure through a country's own internal resources, there will be no ownership of the overall national research agenda. Without ownership, it has been often the case that the donated equipment ends up being underutilised.

Ageing researchers

A key feature of the African research profile is its distinctly ageing population. This is more pronounced in the scientific community. The low output of PhDs by institutions is a contributing factor, but even for the few that do get opportunities to study for PhDs overseas, returning home has been a major problem. Research skills mobility is a global phenomenon and young researchers increasingly want to be in those countries that give them the best opportunities. Given the generally unfavourable prevailing local conditions, emigration of young researchers has meant institutions have no option but to tenure large numbers of ageing researchers who are past retirement age. The general absence or shortage of young researchers who can be mentored by senior researchers is a time bomb, given the broad base of the population pyramid in most African countries. Unless measures are put in place specifically to increase the output of young PhD researchers and retain them, complemented by incentives to attract the African research diaspora, a critical research skills crisis looms in the continent.

High cost of connectivity

Reliable internet connectivity is one of the most important tools a researcher needs. Big data is now the defining phenomenon of our time and any cutting-edge researcher must have a fast and reliable internet connectivity as a basic tool to access global data sources and communicate with peers in research networks. While progress has been made in internet access, costs remain high. The cost of accessing basic, unlimited broadband internet in Zimbabwe is between US\$60 and US\$120 per month. While in absolute terms this is comparable to countries such as Australia, it is very costly given Zimbabwe's average monthly income of US\$253 compared to US\$6,500 in Australia. Due to cost, bandwidth is a key limiting factor at institutions, which constrains information access and limits communication to basic email. This is compounded by the fact that telecomms companies continue to bill academic institutions at very high commercial rates, rather than cheaper educational rates.

Little demand for research from industry and public sector

For research to thrive, it requires a ready market for its outputs. Traditionally, academics conducted research to publish papers and get promotion within their institutions, but the primary purpose of research should be to produce useful new knowledge for industry and the public sector to produce better products and services. Ideally, the research agenda should be largely driven and funded by those who consume its outputs. The local context, however, lacks this 'pull' factor in the R&D value chain, as evidenced by weak demand for research from industry and the public sector. Many reasons are attributed to this phenomenon. Some of them are structural, especially where industry is concerned. The domination of the industrial sector in developing countries by multinationals is one major contributing factor to low investment in R&D. Most multinationals tend to site their research centres in their country of origin for strategic purposes. However, the absence of demand for research outputs by the public sector is most worrying. The absence of commissioned research is evident in poorly crafted policies that are not informed by research results. If governments themselves are not consuming research results, they have no incentive to commit already-limited resources to the research agenda.

Challenges to evidence-based policy in Zimbabwe

Good policy and its means of implementation must be an outcome of well-considered positions informed by research evidence. The lack of demand for research results reflects the lack of capacity in both researchers and consumers of research (policy-makers). The researcher must be able to research and package his/her research results in a manner that the policy-maker can understand. Those using research findings need basic competencies to interpret the results and confidence in the research; the latter is particularly important where evidence is contrary to that expected. The general belief that foreign research

is superior to local research has compounded low confidence in and take-up of the latter. More often than not, researchers and policy-makers have found themselves at cross-purposes, rather than working closely together.

The absence of readily accessible local repositories of published research or research-informed policy briefs presents a challenge to using research results to generate evidence-informed policy. The most useful data on most countries is owned and stored outside those countries.

In the case of Zimbabwe, one of the major success stories in evidenced-informed policy has come from the health and education sectors. Through commissioned research and the work of dedicated institutions like the Biomedical Research Institute, Zimbabwe has implemented evidence-informed policies that have seen a massive reduction of HIV and AIDS prevalence from a peak of 27.7% in 1997 to the current average of 15%, but this example remains the exception rather than the norm.

Looking ahead

Going forward, it is imperative that developing countries, Zimbabwe included, put in place robust mechanisms and nurture a new culture of drawing on research results to inform policy. To do this there is an urgent need to invest in the research skills development value chain and accelerate training of researchers at PhD level. The public sector must be one of the prime consumers of research outputs through commissioning research and setting up think tanks that will utilise research results to inform public policy. If the public sector becomes an active consumer of research outputs, it is much easier to tackle the perennial problem of underfunding; those that allocate resources can see a direct correlation between research and public-sector service delivery.

Developing countries that have suffered skills flight should adopt innovative ways of harnessing their diaspora. Advances in information and communications technologies offer great windows of opportunity to tap into the skills of researchers worldwide. If properly structured and correctly implemented, programmes harnessing the diaspora could be a new source of growth for developing countries. In aiming to assist them, it is imperative that development agencies craft programmes that help harness the diaspora's potential. The need to establish local repositories for refined research outputs and policy briefs is urgent. These repositories will be an active medium helping to bridge the gap between research and policy.

For more information, contact: Willie Ganda, email: wgdanda@zchpc.ac.zw; gandawd@yahoo.com; <https://www.linkedin.com/in/gandawillie>

References

NEPAD, 2014. *African Innovation Outlook II* (NEPAD) April 2014, www.nepad.org/download/file/ffd/949