Working Together to Support Research in Ghana

A briefing paper to inform a consultation convened by the Consortium of Academic and Research Libraries in Ghana (CARLIGH) to identify ways to strengthen research communication in Ghana

Contents

Introduction

The research productivity of Ghana has been steadily increasing and in many respects it is on a par or out performing other countries in the region in terms of productivity, citations and collaboration.

However, Ghana is ambitious and it's ICT for Accelerated Development and Science, Technology and Innovation policies look to a future where the country has a knowledge base that will enable it to accelerate human resource and physical infrastructure development, produce and process its natural resources, produce higher technology goods and services, facilitate government services, promote national health, etc.

In line with these ambitions, the Consortium of Academic and Research Libraries in Ghana (CARLIGH) and INASP are facilitating a consultation and planning process involving people working on research communication in Ghana, including the research institutions, ministries, library association, library consortium, academic and research network, academic journals, etc.

The process

The process involves the following five stages.

Stage 1: circulation of this briefing document, to inform discussions in the next two stages;

Stage 2: three face-to-face meetings in Accra with representatives from CSIR, Ghana Atomic Energy Commission and Noguchi Memorial Institute for Medical Research;

Stage 3: online consultation for research institutions outside Accra and other interested parties, including GARNET, library association, representative from academic journals, etc. These Stage 2 and 3 meetings will review and validate the briefing document and consider:

a. What is: barriers and best practice in the current research communication system in Ghana;

b. What could be: aspirations for future research communication in Ghana

Stage 4: strategy and planning meeting with key influencers and decision makers (including representatives from the face-to-face and online consultations) and informed by document collating input from Stages 1–3. The meeting will decide:

a. What should be: designing the future research communication system in Ghana;

b. What will be: how the desired changes will be implemented.

Stage 5: the agreed plan is circulated to all interested parties and progress reported on to an agreed schedule.

What do we mean by a 'research communication system'?

A research communication system could be seen as an interdependent set of people and processes, working together to better understand the world we live in and, in many cases, to improve the lives of others by finding solutions and innovations that address social, economic and environmental problems.

Key actors in the system are:

- the researchers themselves, who could be viewed as knowledge and innovation generators;
- the people that enable the research process such as library and IT professionals and the information intermediaries involved in disseminating and communicating research);
- the policy makers and practitioners who (ideally!) use the research and influence the research agenda.

These people may be based in universities, research institutions, government agencies, publishing agencies, science councils and academies, businesses, NGOs, CSOs, etc. They may interact in formal or informal ways, and they might well have very different interests and agendas.

The knowledge, skills and attitudes of these actors, and the policy, culture and resource contexts in which they work will influence what research is done, how it is done, and if and how research informs policy and practice.

Together, this mix of environment, people and processes may be thought of as a research communication system.

The current research communication system in Ghana

Research productivity in Ghana has risen over the past ten years and currently ranks second in the region [1,2]. The number of papers published, the number of times those papers are cited in other work, and the amount of collaboration between researchers have steadily increased and the country is now on a par or even out performing other countries in the region [1,2].

Enrolment in higher education in Ghana rose by nearly 4% between 2008 and 2012 which again places Ghana on a par with other African countries (but below the average of lower middle income countries) [3]. Participation in research degrees is also on the rise. In the University of Ghana, for example, the number of MSc students rose from 541 in 2001 to 1,591 in 2011. Similarly, although still relatively low, the number of PhD candidates rose from 9 to 36 [4]. Additionally, 42 researchers attended training in research writing and 216 joined the AuthorAID [5] network as mentees.

Institutions in Ghana have access to over 16,500 international electronic journals, from which nearly 200,000 papers were downloaded during 2014 alone [6]. Ghana also publishes a number of scholarly journals with, for example, 26 hosted on African Journals Online [7]. The three main subject areas are common to the region—agriculture, biological sciences and medicine—and Ghana also has strength in publishing environmental science [1]. The subject areas with the highest relative impact are dentistry, veterinary science and energy [2].

There are also a number of key research-strengthening policies, including The National Science, Technology and Innovation policy. Although in the past the role of research in the socio-economic

development of the country has achieved prominence only to wane again, since 2010 it appears to have achieved a greater priority and existing policies have been reviewed and the concept of innovation included in the frameworks to apply science and technology to achieve social and economic objectives [1].

However, there is always room for improvement. There is a lack of senior academic staff to provide research leadership—falling in Ghana from 19% of permanent academic staff in 2009 to 18% in 2011 whilst the continental average rose from 20% to 21%—and women remain under-represented amongst research degree candidates [4].

International research collaboration in Ghana has risen less than it has in comparable countries in the last two decades [2], and indeed has decreased since 2006 (interestingly, at the same time as the country's productivity has increased) [1] . Internal research collaboration and networking is reported as being limited, and there is evidence that this inhibiting innovation and R&D (research and development) [2].

Within Ghana there is also evidence of moves towards establishing research offices to those in high knowledge producing universities globally. However, in some cases too many senior management positions have been established, leading to increased bureaucracy rather than productivity [4].

Additionally, growth in graduate numbers is outpacing growth of employment opportunities and there is a reported need for policymakers to define a coherent higher education strategy that aligns with Ghana's social and economic development priorities [3].

Globally, ensuring that research informs policy and practice is particularly difficult and little understood [8]. High-quality research and effective dissemination have been shown to be no guarantee that the research is taken up, and research communication is rarely a two-way process in which policy makers and practitioners have the opportunity to influence the research agenda, rather than being just 'consumers' of the research.

Despite these challenges, overall the positive policy environment coupled with a strengthening economy and healthy existing research performance would seem to combine to provide great opportunities for the future of research in Ghana.

Key aspects of effective research communication systems

The literature shows there are some general characteristics of the research communication process that can help or hinder progress. For example, whilst there is a great deal of high quality, relevant and timely international data and information available in Africa—comparable to the data and information available in universities in Europe or America—making that information and knowledge available does not necessarily mean it can or will be accessed or used. Low awareness of what is available, limited connectivity, limited access to a computer, limited IT literacy, and low levels of research and extension activity can all hold back the exploitation of the information available [9].

Rather than an extensive review, the sections below give a brief outline of some of the key issues as a prompt for discussions during the consultation.

Resources

Clearly, at national, institutional, departmental level availability and efficient and effective use of funding and equipment are important factors.

It has long been recognised that a stable physical infrastructure with well-maintained buildings, few or no power outages, and adequate hardware and connectivity will benefit the research communication process [10, 11]. Additionally, specialist software for research data analysis, library cataloguing, journal publishing, etc will support good research communication.

Resources to support ongoing capacity and skills development are also important (see Skills section below).

Knowledge

Knowledge of when and why you need information, what resources are available, and how to use information and knowledge responsibly are foundation stones to the research communication system.

A key knowledge gap identified in the literature is the need for improved and systematic user needs assessment: "*it is not what individuals and institutions need by way of specific information, but the process by which information needs are identified and then how they are met, which is a capacity issue*" [12, p6]. This can be constrained by researchers or potential users of research not knowing their needs or the information and research options available, and by lack of awareness that needs assessment is necessary or useful, lack of knowledge about user needs assessment methods, and lack of qualified staff amongst library, IT, information intermediaries or policy makers.

Skills

Clearly, an effective research communication system demands a wide range of skills: IT literacy, information literacy, data analysis, digital preservation, e-publishing, web design, writing, critical thinking, problem solving, influencing, communication, project management, networking, team leadership, etc, etc.

Rather than a one-off need, skills development is usually a continuous process to allow people to maintain their professional standards as researchers, library and IT professionals, information intermediaries, policy makers and practitioners.

Attitudes and organisational culture

Individual attitudes and organisational culture can also have a significant impact on research communication. If research and research resources are valued within an institution, it is more likely that adequate resources and attention will be allocated to enabling the research process.

Similarly, if decision makers and influencers at the national or organisational level are 'research minded' and value the changes that new evidence might bring, it is far more likely that the findings from research will be implemented. If however, the evidence conflicts with their personal experience and views or if there is a general organisational resistance to change, it is less likely that it will be taken up.

Strategic planning and policy

At national level, political and economic stability and the existence of coherent policies such as Ghana's National Science, Technology and Innovation and sector-specific policies can support research communication [1] and it has been argued that for higher education to make a sustainable contribution to development, national-level coordination of knowledge policies and of the key actors needs to be planned and delivered [13].

At institutional level, acceptable-use IT policies, continuous professional development policies for staff and Open Access policies that mandate staff to upload research articles and other academic materials into the university's digital repository have been shown to have a significant influence [14].

A key part of planning and policy making is ongoing monitoring and evaluation. These processes enable those involved in the research communication process to learn from experience, plan, make better decisions, make corrective actions where needed, manage risk, seize opportunities, be accountable and demonstrate value.

Collaboration

Effective collaboration has the potential to transform the research communication system. Already, there is a strong tradition such partnerships as shown in, e.g., library consortia such as CARLIGH, national research and education networks such as GARNET, and Journals Online groups such as GHANJOL. These collaborations have been shown to work best when the partners:

- Have something of value to contribute and are good at their core business;
- Share major strategic objectives in common so they want to make the partnership work;
- Need each other, have complementary skills and cannot do separately what they can achieve together;
- Are willing to invest long term and are willing to commit resources, e.g. time, people and/or money;
- Are willing to share information and there is an open relationship;
- Develop linkages and shared ways of doing things;
- Relationship is given a formal status with clear responsibilities and decision-making processes;
- Behave in an honourable way and do not undermine each other.

References

All accessed on or after 30th March 2015.

[1] Asamoah-Hassan H and Belcher M 2014 *Ghana: Country Research Profile* INASP

[2] Arencibia R *et al.* 2012 *Scientific Development in African countries: a Scientometric Approach 1996–2009* http://www.inasp.info/en/publications/details/113/

[3] Guerrero C 2012 *Higher education case studies: Ghana* DFID http://r4d.dfid.gov.uk/pdf/outputs/misc_Education/61296-Ghana_Higher_education_case_studies.pdf

[4] Cloete N and Bunting I 2012 *Challenges and opportunities for African universities to increase knowledge production* OECD Programme on Innovation, Higher Education and Research for Development http://www.oecd.org/sti/Challenges%20and%20opportunities%20to%20increase%20knowledge%20production-%20Draft-%20Nico%20Cloete.pdf

[5] AuthorAID http://www.authoraid.info/en/

[6] INASP 2014 Ghana Fact Sheet http://www.inasp.info/en/publications/details/149/

[7] African Journals Online www.ajol.info

[8] Hunter B 2013 *Implementing research evidence into practice: some reflections on the challenges* Evidence Based Midwifery, September https://www.rcm.org.uk/learning-and-career/learning-and-research/ebm-articles/implementing-research-evidence-into-practice

[9] Harle J 2010 *Growing Knowledge: Access to Research in East and Southern African Universities* Association of Commonwealth Universities https://www.acu.ac.uk/focus-areas/arcadia-growing-knowledge

[10] Carnegie 2004 *Opportunities and Challenges for the Academic Library of Carnegie Grantees in East and West Africa* http://www.library.illinois.edu/mortenson/activities/reports/

[11] Chisenga J 2006 *Information and Communication Technologies: Opportunities and Challenges for National and University Libraries in Eastern, Central and Southern Africa* http://core.ac.uk/download/pdf/11881784.pdf

[12] Walton P 2006 Assessment of Agriculture Information Needs in African, Caribbean and Pacific States https://cgspace.cgiar.org/handle/10568/52390

[13] Bailey T 2014 *The role and functions of higher education councils and commissions in Africa: a Case Study of the Ghana National Council for Tertiary Education* Centre for Higher Education Transformation http://chet.org.za/files/Ghana%20ROLE%20AND%20FUNCTIONS%20OF%20HE%20COMMISSIONS%20AND%20COUNCILS.pdf

[14] Kabugu A 2014 *Enhancing the visibility and accessibility of research* INASP http://www.inasp.info/en/publications/details/138/