

Satellite meeting E4GDH SIG: “Evidence for Global and Disaster Health - Where are we now and where do we need to be?”

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## **The transitional role of Research and University Librarians/Knowledge Specialists in developing countries in facilitating transformation for sustainable development**

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### **Abstract:**

*The university and research librarians as well as knowledge specialists in the global south have of recent been engaged in processes that require them to assist researchers and policy makers with the deployment of information and data. Open science, open data and open access has made the role played by librarians and knowledge specialists critical in understanding knowledge transformation for sustainable development.*

*University researchers are being encouraged to collaborate as part of their research and aggressively solicit funding for their research that addresses the respective countries grand challenges that impact on the Sustainable Development Goals. Of particular interest is goal number 3 ‘Ensure healthy lives and promote well-being for all at all ages’. The expectation is for university librarians and knowledge specialists to provide information and data that can reinforce or facilitate innovations that can be harnessed for improvement in health; whether the data provided on innovation are conducive to bring policy change and the necessary conditions for transformative innovations to succeed as part of public good.*

*As governments increase their spend on Research and Innovation, research and academic librarians are in the forefront advocating for the awareness and use of the research tools and research opportunities that are key in health research and in particular disaster health.*

*The paper will provide an analysis of the expected roles academic/research librarians and knowledge specialists assume in the provision of information and data to the complex health problems that developing countries face.*

**Keywords:** knowledge, developing countries, sustainable development, information provision, health research.

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## **Background**

Libraries have a history of championing information literacy programs through the provision of access to data and information that informs the nature of research which is instrumental in the generation of new knowledge for sustainable development (Igbinovia & Osuchukwu 2018). The role of a librarian has transitioned as the demands of the varied communities served evolves due to emerging, expanded and demanding needs. The boom in information especially online has put pressure on different communities as it has made it increasingly harder to distinguish quality, relevant and correct information and data. More so, in many cases, the frontline workers like many professionals do not have enough time to evaluate such differences and in other cases they do not have the capacity. The expected role of a librarian as such is evolving to more specialized knowledge managers with a deeper grasp of data management, knowledge evaluation, and application of research tools, evidence summary production and knowledge translation. This paper explores how these evolving roles are being met in the developing countries with a particular look at some initiatives in Sub-Saharan Africa, and how this is impacting on disaster health response and its management for specific countries.

## **Training**

The African Union Agenda 2063 places prominence on research and innovation for sustainable development. According to Barrett (2017) The World Bank and Elsevier study “found that the quantity and quality of published STEM research originating from within sub-Saharan Africa is much lower than any other world region”. The research that is published tends to depend on international collaborations and be heavily skewed towards agriculture and health sciences.

The emphasis on agricultural research for food security does not negate diversified industrial economy that focuses on STEM Research and Development (R&D), health, science education and engineering and technology based research and occupations.

The perceived upsurge in the levels of knowledge generated in the scholarship of sustainable development and in particular focus area of human health and biodiversity; this increased knowledge fosters the knowledge management (KM) practices. The provision of access to knowledge reinforces training (Igbinovia & Osuchukwu 2018). Training is one of the key aspects that is enabling librarians in the south to develop their skills and apply learnings to their client needs. Training offerings are provided in key areas such as research data management, electronic resources management, research evaluation and measurement; appraisal of information and database management. These are key in enabling a librarian to

work with researchers and frontline workers especially during times of disaster health. However, one key training which is making headway and has had remarkable evolution in the way librarians work is knowledge management extending to knowledge brokering and research evaluation.

The discipline of knowledge brokerage emerged from Canada in the 1990s following recognition by the government of the rise of knowledge-based economies and the need for national investment in activities to gather, use and share knowledge (Canadian Health Services Research Foundation, 2003). Knowledge brokering as described by the Canadian Health Service Research Foundation is about bringing people together to build relationships, uncover needs, share ideas and evidence with the aim of improving practice. It is an approach to enhance the uptake and use of knowledge, moving beyond mere diffusion of research results through reviews, leaflets and summaries. Knowledge brokering involves activities which connect policymakers and practitioners to researchers, facilitating their interaction to forge new partnerships, enable a better understanding of each other's goals and professional culture, and promoting the use of research-based evidence in decision making (Ward, House & Hamer, 2009).

Knowledge brokers are individuals who facilitate translation of knowledge into practice in healthcare. This includes healthcare librarians, information support officers, knowledge managers, educational facilitators and others. Essential training in knowledge brokering is providing librarians with skills in research, in calculating knowledge sharing in practical ways for frontline workers and clinicians, and the key steps of translating knowledge into action.

## **Transitional imperatives**

Libraries and information specialists have begun to rethink their service offerings that were unthinkable in the 20<sup>th</sup> century. The service offerings raise questions with regards to the “rate of transformation and the nature of innovations” in Sub-Saharan African and how to accelerate with the global north in attainment of Sustainable Development Goals (Jantz 2016).

The increased scholarship in sustainable development aspects fosters knowledge workers to redefine their existing services as this can affect the innovativeness of the organization that are subtly influenced by urban or suburban environments as experienced in less economically developed countries. These service focus innovations may require firstly minimal changes in the organizational structure, practices and related processes. Secondly, radical innovation “involve new knowledge that is used to create totally new products or services or to make fundamental changes in an existing product or service”. This organizational innovation which is influenced by the changing and unstable external environment dimensions – social, economic, political, and technological – has enforced organic institutional structures that are flexible with many different roles and job types that encourages new directions in the provision of information and data (Jantz 2016).

The importance of “information access, information sharing, building databases, information skills, scientific/research information, information technology, information advocacy, information analysis and environmental information”; requires improved access to information as they are essential in achieving SDGs. Libraries and information specialists are poised to transition towards improved access as follows:

- Free access to relevant information and the availability of alternative sources of technical expertise that can provide a basis for public discussion.
- The challenge is to ensure that the new technologies are at reach – overcoming the problem of lack of information.
- Developing countries and in particular Sub-Saharan Africa need information on the nature of industry based resource and environmental problems, on risks associated with certain processes and products, and on standards and other measures to protect health and ensure environmental sustainability. Trained people are also required to apply such information to local circumstances – reason the use of Knowledge Brokers.
- The challenge is the pooling of this wealth of data as the information is dispersed among governments and institutions.
- The use of mobile technologies in Sub-Saharan Africa augment digital communications and advanced information analysis, photos, mapping, and other techniques, can provide up to date information on a variety of resource, climatic, pollution and other variables (Chowdhury & Koya 2017).

## Emerging Roles

The work of information professionals is informed by the information practices of society at large (Chowdhury & Koya 2017). The information and knowledge management tools and techniques being used for achieving sustainability in different fields impacts on the training being received and the application in different institutions; this is leading to the emergence of new roles and titles for librarians. Some of which include:

*Research Data Management Services:* data management has emerged as an important new service for libraries in developing countries. However, research suggests that libraries are having difficulty defining and getting started with data management services. Libraries are setting up Institutional Repositories in support of the funder mandates such as the National Research Foundation of South Africa (NRF) Open Access Mandate of 2015. The emerging data support service requires of the librarians an in-depth engagement in the research process, understanding of the data life cycle – that varies significantly across disciplines – and technical and policy issues with regard to the provision of data management service. Librarians offer data service in finding and citing datasets and the maturing service involves outreach and collaboration with researchers as a way of encouraging submission and population of the Institutional Repository (Jantz 2016).

*A Geographic Information Systems (GIS) Service:* libraries are framing services that offer value to the university and can be accommodated within the limited resources. The proliferation of information, information overload and where new knowledge, spatial relationships, and pertinent human health and biodiversity data subtleties are hard to come by; strategic questions are poised for a relationship of a GIS service to the map print collection and map librarianship. GIS applications are transforming scholarship with applications in such diverse areas such the most recent World Health Organization use of GIS to track the chains of the Ebola virus transmission from one person to another. Librarians are required to master the technology and provide training and consultation across the disciplines of humanities, social sciences, and science and collaboration with academic units that are intensive GIS users, such as geography and public policy (Jantz 2016).

*Knowledge translators:* The process of knowledge translation involves producing knowledge summaries that can be packaged in various formats that are ready for use with patient care. Librarians are continually expected to know where to find relevant information, know how to evaluate it, create knowledge summaries and package it in palatable formats ready for use by frontline workers and clinicians (Bornbaum, *et al*, 2015). This is especially useful in disaster health where knowledge packaged in mobile health platforms and one stop online platforms enables frontline workers to make evidence informed and quick decisions.

*Research capacity on Ethics literacy:* the open science and open data phenomena for transparency and replication as well as secondary analysis by other researchers for knowledge transfer, coupled with the growth in research activities, has led to the knowledge of research ethics and awareness (Li and Wong 2017). Libraries as part of the university ecosystem continually receive new cohorts of academics, research fellows, postdoctoral fellows and postgraduate students who are expected to be socialised in ethical principles in the current context of universities fraught with ambivalent jostling discourses. Librarians advocate on issues of intellectual property, for human and animal subjects in research. The librarian further penetrates the academic orientation through training on the collective self-scrutiny and the rigours of a plagiarism-checking device. Libraries are expected to assist in the creation of a pervasive ethical culture and research ethics systems as part of the institution's research capacity development (Lemmer 2017).

*Research assistants:* The push for librarians to know and understand primary and secondary research is leading to more health practitioners extending a research role to librarians. This is gaining momentum in secondary research roles where librarians lead with literature searching and desktop research to substantiate the primary research data produced by the clinicians. The collaboration of librarians and clinicians or frontline workers in research is giving research assistant and co-author roles for librarians.

*Systematic reviewers:* One of the key processes in doing a systematic review is doing a comprehensive literature review and synthesis. This roles is continuously now falling on the hands of librarians who are slowly being recognized as co-authors by health researchers. This is increasingly seeing the participation of librarians in meetings, conferences and continual education training on systematic reviews as they are now seen as collaborators rather than providers of information.

*Experiential Knowledge brokers:* Experiential learning means learning from experience or learning by doing. It is done first hand. Experiential knowledge brokers immerse practitioners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking. This type of knowledge can be captured using:

- i. Case Studies
- ii. Knowledge Harvesting
- iii. Peer Assist Reviews
- iv. Storyboarding

These ways of capturing this type of knowledge are done by librarians using specific processes and lead to knowledge sharing amongst practitioners and frontline workers, which helps them in decision making and ultimately knowledge translation.

## **The relationship between the Sustainable Development Goals and the role of libraries and Information Specialists**

According to Singh (2017) “teaching and learning are as old as human beings have lived. Education is primordial and integral to the human condition”. It is noted that teaching and learning has not been freely and widely available to all people in Sub-Saharan Africa. The denial of access to education and training is premised in the prevalent human oppression and exclusion evidenced in this part of the world; which is manifested by colonialism, uneven power relations that marked slavery, the industrial age and the information economy. An important development in the formulation of the Sustainable Development Goals is the universal recognition of the importance of quality education in Goal 4.

Chowdhury & Koya (2017) asserts that the United Nations (UN) has mentioned and maintained the importance and need of appropriate information management, access, use and sharing of information for achieving sustainability in different areas. The library is perceived to be a “global resource for education and research at the nexus of information, people, and technology”.

The SDG Targets in Goal 4 that are of particular relevance to the role of libraries and information specialists with alignment to Goal 3 Ensure healthy lives and promote well-being for all at all ages, are:

By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university;

By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship;

By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons living with disabilities, indigenous peoples and children in vulnerable situations;

By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and specific programmes, in developed countries and other developing countries (UNESCO: 2014).

The targets challenge the issues of who are the actual role players and who bears the responsibility on the complex and inter-related issues of accessibility and affordability of knowledge resources.

Arguably, libraries and information specialists have also to consider other than the state, the appropriate application of the following interrelated and essential features to the right to education as depicted in General Comment 13 of the United Nations Committee on Economic, Social and Cultural Rights (CESCR) namely:

**Availability** – which requires functioning educational institutions and programmes have to be available in sufficient quantity within the jurisdiction of the state;

**Accessibility** – which requires educational institutions and programmes to be accessible to everyone, without discrimination, within the jurisdiction of the state. This has three overlapping dimensions: (i) non-discrimination, which requires that education must be accessible to all, especially the most vulnerable groups; (ii) physical accessibility, which requires that education must be within the safe physical reach; and (iii) economic accessibility, which requires that education must be affordable to all;

**Acceptability** – which requires that the form and substance of education, including curricula and teaching methods, have to be acceptable (i.e relevant, culturally appropriate and of good quality) to students; and

**Adaptability** – which requires that education must be flexible so that it can adapt to the needs of changing societies and communities, and respond to the needs of students within their diverse social and cultural settings.

It is apparent from the availability, accessibility, acceptability and adaptability provisions that there are clear obligations that exist for libraries. The tangible role of libraries can be seen through the roles in information literacy programmes and ecological literacy, making available open source academic materials, training of researchers, policy makers, citizen science and public outreach support to ensure the application of knowledge in solving key global disaster health problems. Knowledge workers also foster the establishment of Communities of Practice that facilitate sharing of information, learning and cooperation in pursuit of practical sustainable solutions.

It is incumbent of the libraries to reinvent and innovate their services and take concrete and targeted steps to address the transformative agenda for sustainable development. It is also paramount to develop a culture of sustainable data and information practices across disciplines and businesses as Sub-Saharan Africa suffers from staff expertise required for data and information management (Chowdhury & Koya 2017).

## **Global challenges that impact Sub-Saharan Africa**

The emphasis of the SDGs on multiple, interrelated and indivisible objectives requires integrated policy frameworks for implementation in developing countries. These multiple objectives speaks to the following challenges: poverty and hunger, climate change, flight and displacement; migration, unsustainable growth and economic crises; health epidemics; inequality; social exclusion; lack of decent work and social protection, political instability as well as insecurity and violent conflicts which ravage Sub-Saharan Africa.

Barrett (2017) asserts that “African leaders have responded to the SDG agenda by setting regional priorities within the Common Africa Position (CAP) on the post – 2015 development agenda (AU 2014) and later Agenda 2063”.

The agenda into the national development plans requires the continuous mobilisation of resources and political support, meaningful participation of stakeholders and citizens. A careful look at the global challenges of our time reveals not only considerable fragmentation, gaps and enforcement challenges, but also the reinforcement of existing power asymmetric between North and South, and between rich and poor.

Education is recognised as contributing to the development of human capital for realising the Agenda 2063 vision. Universities are perceived to drive science and technology research and innovation, the other sectors such as libraries and information specialists are perceived to contribute towards the creation of a scientific culture within a knowledge society – including indigenous knowledge (Barrett 2017). Knowledge brokers and civil society and other networks play a major role in promoting corporate social and environmental responsibility and corporate governance associated with transparency and anti-corruption (UNRISD 2016).

## Conclusion

The role of librarians, knowledge workers and information specialists has always been evolving, but this has now been transitioned at a faster pace than ever due to the changing needs of the beneficiaries and users. The intermediaries now need to have extended multiple skills to meet the demands of understanding and playing a role in disaster health situations as the inherent skills of librarians as well as the emerging ones provide quick access to the best evidence. In Sub Sahara Africa, some continuous professional capacity development efforts are being done to meet these new skills and the emergence of the knowledge broker shows the fundamental role librarians and knowledge workers play in global disaster health situations.

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## Bibliography

1. Barrett A M. (2017). Making secondary education relevant for all: reflections on science education in an expanding sub-sector, *Compare: A Journal of Comparative and International Education*, 47:6, 962-978. DOI:10.1080/03057925.2017.1343127.
2. Bornbaum C, Kornas K, Peirson L, Rosella L. (2015). Exploring the function and effectiveness of knowledge brokers as facilitators of knowledge translation in health-related settings: a systematic review and thematic analysis. *Implementation Science*, 10:162.
3. Canadian Health Services Research Foundation (2003). *The theory and practice of knowledge brokering in Canada's health system*. Retrieved from [http://www.cfhi-fcass.ca/migrated/pdf/Theory\\_and\\_Practice\\_e.pdf](http://www.cfhi-fcass.ca/migrated/pdf/Theory_and_Practice_e.pdf)
4. Chowdhury G and Koya K. (2017). Information practices for sustainability: role of iSchools in achieving the UN Sustainable Development Goals (SDGs). *Journal of the Association for Information Science and Technology*. 68 (9):2128-2138. DOI:10.1002/asi.23825
5. Dagenais C, Laurendeau M, Briand-Lamarche M. (2015). Knowledge brokering in public health: A critical analysis of the results of a qualitative evaluation. *Evaluation and Program Planning*, 53, 10–17.

6. Elueze, IN, Evaluating the effectiveness of knowledge brokering in health research: a systematised review with some bibliometric information, 2015. *Health Information and Libraries Journal*, DOI: 10.1111/hir.12097
7. Igbinovia M and Osuchukwu NP. (2018). Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria. *International Federation of Library Associations and Institutions* 44 (2): 119 – 131.
8. Jantz Ronald C. (2016). *Managing creativity: the innovative research library*. Chicago: Association of Research Libraries.
9. Knowledge Into Action in Scotland's Health and Social Services: *Implementation of Knowledge into Action 2013-2016*.
10. Lemmer EM. (2017). Infusing ethics into everyday practice in higher education. IN: *Ethics in Higher Education: Values-driven leaders for the future*; Eds: Divya Singh and Christoph Stuckelberger. www.globethics.net.
11. Li Kam Cheong and Wong B T M. (2017). Building up a research ethics system: experience of a teaching university. IN: *Ethics in Higher Education: Values-driven leaders for the future*; Eds: Divya Singh and Christoph Stuckelberger. www.globethics.net.
12. Singh A. (2017). The relationship between the sustainable development goals and the role of higher education institutions: a South African perspective. IN: *Ethics in Higher Education: Values-driven leaders for the future*; Eds: Divya Singh and Christoph Stuckelberger. www.globethics.net.
13. UNESCO, "Sustainable development begins with education: how education can contribute to the proposed post-2015 goals" (2014)  
Retrieved from: <http://unesdoc.unesco.org/images/0023/002305/230508c.pdf>, at p 2.
14. UNRISD Flagship Report (2016). Policy innovations for transformative change. Implementing the 2030 Agenda for Sustainable Development. www.unrisd.org
15. Ward V, House A, Hamer S. (2009). Knowledge Brokering: The missing link in the evidence to action chain? *Evidence & policy. A journal of research, debate and practice*. 5(3):267-279. DOI:10.1332/174426409X463811.