OPEN ACCESS INSTITUTIONAL REPOSITORIES IN SELECTED EAST AFRICAN UNIVERSITIES: ACHIEVEMENTS, CHALLENGES AND THE WAY FORWARD

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Abstract

Institutional repositories (IRs) have been around since the early 2000's and in East Africa since 2006, specifically at Makerere University in Uganda. Universities in East Africa are still in the intermediate stages of embracing open access and libraries have taken the lead in initiating and implementing IRs. The network of open access repositories was envisioned as the backbone of the open access movement as libraries around the world began implementing and capturing the intellectual assets of their institutions. Researchers in developing countries were thought to benefit more from the open access movement, given that they were more pressed for scholarly literature during the serials crisis and much of their research output was grey literature with few publication avenues. Are repositories in East Africa enabling online dissemination and accessibility of the scholarly information in universities? This paper, therefore, sought to establish the achievements of open access institutional repositories in universities in East Africa, the challenges affecting the provision of open access, and the strategies that could be recommended as the way forward.

Data for this paper was collected through a thorough search of the Internet, journal databases and university websites in Kenya, Tanzania and Uganda to identify literature about open access and institutional repositories in East Africa. The findings reported were also partially based on the author's PhD research and practice as an IR manager.

Keywords: *Open access, Institutional repositories, Universities, East Africa*

Introduction

Open access is the "free availability and unrestricted use" of publications or scholarly literature/information online (Suber, 2015). According to Shearer (2002, p. 90), "the philosophy of open access grew out of the dissatisfaction with the traditional pricing system of scholarly publishing in the west, where universities and research institutions were forced to cancel a significant number of subscriptions." Johnson (2003) noted that IRs were a strategic response to the opportunities of the digital networked environment and the problems in the traditional scholarly journal system. The Budapest Open Access Initiative

(BOAI, 2002) that first defined the open access concept proposed two avenues through which it would be achieved, that is, through publishing in open access journals (the Gold route to open access) and depositing copies of articles published in traditional journals in open access repositories (the Green route to open access). The network of open access repositories was envisioned as the backbone of the open access movement as libraries around the world began implementing and capturing the intellectual assets of their institutions. Harnad (2007) envisioned that about 5% of the research would be archived by the open access journals, while the remaining 95% could be freely accessed via repositories if all researchers immediately began self-archiving their work that they publish in traditional journals.

Crow (2002) defined an institutional repository as a "digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end-users both within and outside of the institution with few, if any, barriers to access". IR's can generally be regarded as a mechanism for ensuring access to knowledge produced at a college or university. Yeates (2003) noted that IRs expand the range of knowledge that can be shared. Crow (2002) pointed out that institutional repositories that constitute the disaggregated model of scholarly publishing included not only pre-prints and research papers, but also extended to research data sets, digital monographs, theses and dissertations, conference papers, listserv archives, and other grey literature. An IR is, therefore, a tangible indicator of a university's scholarly information that preserves the intellectual output of the institution (Giesecke, 2011) and helps increase its visibility, accessibility, prestige, public value, and can be used as a marketing tool for the institution to potential funders, prospective staff and students. Lagzian, Abrizah and Wee (2015, p. 197) noted that "IR's have been increasingly recognised as a vital tool for scholarly communication, an important source of institutional visibility and a viable source of institutional knowledge management." The IR can be used for a number of purposes, some of which have not yet been appropriately exploited in East Africa. The IR is mostly used to manage collections of scholarly information and preserve them for future use/access. However, IR's also increasingly serve as scholarly communication and collaboration tools for researchers, especially interdisciplinary researchers; journal publishing platforms and as a source of information for bibliometrics and Research Assessment Exercises.

Westell (2006, p. 221) noted that "institutional repositories were not designed to control access but to facilitate open access to their holdings," and that "the pure institutional repository provides material with no access limitations to support the widest possible dissemination of research findings" (p. 222). Shearer (2003, p. 97) pointed out that "the major goal of the institutional repository, as it grew out of the open access movement was to disseminate scholarly material."

Shearer (2003, p. 92) also further noted that "in most cases, IRs had no barriers to their content or very low-barrier access (such as registration requirements)." Chan (2004) noted that the primary role of institutional repositories was to facilitate open access to the traditional scholarship in institutions. To sum this up, Casey (2012) re-affirmed the purpose of institutional repositories as partly meant to serve as open access repositories of the intellectual output of the faculty, besides showcasing the tangible results of the institution globally. Are institutional repositories in East Africa achieving the open access goal?

Institutional repositories have been around since the early 2000's and in East Africa since 2006, specifically at Makerere University in Uganda. Universities in East Africa are still in the intermediate stages of embracing open access and libraries have taken the lead in initiating and implementing IRs. They have popularly been known for increasing an institutions visibility on the web because of the scholarly information being displayed from universities. By 30th March 2018, there were 40 IR's in East Africa registered in the Directory of Open Access Repositories (OpenDOAR), 28 from Kenya, 10 from Tanzania and 2 from Uganda. Some of these repositories were however, not from universities, and 4 of them had dead links. There are a number of universities in East Africa that have initiated IR projects, some of which are already accessible on the web but not yet registered in either OpenDOAR or the Registry of Open Access Repositories (ROAR). The extent of IR growth therefore continues to grow and a few studies have already examined their adoption and use. In East Africa, however, not much is known about how far they are enabling open access. Holderied (2009) noted that "institutional repositories present academic institutions with the opportunity to provide global open access to the scholarship that is created within that institution", and the developing world was bound to benefit more from the growth of the open access movement (Shearer, 2002).

A number of studies have shown the achievement of open access in IR's in the developed world, with universities in Australia recording rates of non-full-text documents as low as 5% or less (Xia & Sun, 2007). Not all repositories in the developed world have achieved maximum open access as such, and this depends on a number of factors, the objective of having the repository being one of them. On a world perspective, Prost and Schopfel's (2014) work established that a number of the 25 institutional repositories that they surveyed from the Directory of Open Access Repositories were either with metadata without full-text, metadata with full-text only for authorized users, and items that were under embargo or that were restricted to on-campus access. In other words, these repositories were not as open as expected by the Budapest Open Access Initiatives standards. Prost and Schopfel's study however, did not establish why these repositories were not fully open access, other than pointing out that this would be explicitly clarified in each individual institution's open access policies. Given that IR's were viewed as a complementary option to accessing

and disseminating scholarly information, and the developing world was bound to benefit more, this study sought to establish the achievements of open access institutional repositories in universities in East Africa, the challenges affecting the provision of open access, and the strategies recommended as the way forward.

Methodology

University websites in Kenya, Tanzania and Uganda were surveyed for the presence of institutional repositories, the number of items in the repositories (by March 2018) and for the selected universities, how much of these items were open access (by 2014). A thorough search of the Internet and journal databases was also conducted to identify literature about open access and institutional repositories in East Africa. This was complemented by the findings of the author's PhD study on the management and accessibility of open access institutional repositories in selected universities in East Africa, where both qualitative and quantitative methods were used to collect data from 3 universities, with 1 IR from Kenya, Tanzania and Uganda, purposively selected based on the highest number of items in the IR in each country. Six librarians in charge of the IRs were purposively selected and interviewed, whereas 183 researchers, selected using systematic random sampling, responded to a questionnaire. The selected universities, with their level of open access by 2014 were Kenyatta University (KU, 32% OA in IR) in Kenya, Makerere University (Mak, 22% OA in IR) in Uganda and Muhimbili University of Health and Allied Sciences (MUHAS, 98% OA in IR) in Tanzania. To establish the level of open access of the institutional repositories of the universities in this study, an analysis of the first twenty items of each letter of the alphabet was checked for full-text accessibility and the average number of items with full-text content determined.

Achievements

A number of universities in East Africa have acknowledged the role of IRs in centrally collecting, disseminating and preserving the scholarly information of the institution and invested in initiating IR projects, although some of these universities are not very old and still have to accumulate their collections for online visibility and accessibility. IR's in East Africa are growing, but at different rates – fastest in Kenya currently with 27 repositories in universities (see appendix), followed by Tanzania with 7 (University of Dar es Salaam, Sokoine University of Agriculture, Open University of Tanzania, State University of Zanziber, Mzumbe University, Muhimbili University of Health and Allied Sciences, Nelson Mandela African Institute of Science and Technology) and Uganda with 6 repositories in universities (Aga Khan University, Kampala International University, Makerere University, Makerere

University Business School, Uganda Christian University and Uganda Martyrs University) that are currently visible online. Four of the six universities with repositories in Uganda participated in the Electronic Information For Libraries – Swedish Programme for ICT in Developing Regions (EIFL-SPIDER) 2016/2018 project (Open access policies in Kenya, Tanzania and Uganda) and have policies that they are promoting. The plans used to advocate for the policy help in promoting the repository, which is a strategy for growth. At Makerere University, each College Board is being sensitized about the various policy statements in the IR Policy and this is building awareness of how content in the repository is expected to be generated, with responsibilities assigned to different categories of stakeholders. Westell (2006) advised that "a champion in upper administration (at the dean level) and a management structure which includes appropriate advisory committees will contribute to sustained success." This is the next stage to be followed in implementing the IR Policy at Makerere University. Harnad and McGovern (2009) emphasised the importance of mandates incorporated within policies to ensure deposits are made, ensuring the growth and open access of the IR. With reference to the author's PhD study findings, 68% of the respondents were in favour of having university mandates requiring researchers to deposit research output in the institutional repositories. This corroborated with many other studies (Abrizah, 2009; Dutta & Paul, 2014; Goutam & Dibyendu, 2014; Kennan, 2007; Kim, 2007; Sale, 2006; Singeh, Abrizah & Karim, 2013; Swan & Brown, 2004; 2005; Yang & Li, 2015), and the Consortium of Uganda University Libraries (CUUL) universities that participated in the EIFL-SPIDER 2016/2018 project have integrated mandatory statements in their IR policies. Although mandates are good and highly recommended, Quinn (2010) pointed out that mandates alone would not overcome the researcher's psychological resistance to participation in self-archiving, and suggested that this should be done together with other strategies of encouraging faculty to deposit articles in repositories.

With the growing number of institutional repositories in East Africa, much of the grey literature, such as research reports, theses and dissertations, seminar and conference papers that were unpublished and previously only physically accessible from the library shelves (Chisenga, 2006), is now visible on the web, and increasingly being made accessible to the general public for local and international utilisation. Although the level of open access was noted to be low by 2014 at Kenyatta University (32%) and Makerere University (22%), universities in East Africa are prioritising open access policies to ensure that what is made visible online is actually accessible in full-text. Kenyatta University, which started its IR with abstracts from the Database of African Theses and Dissertations (DATAD) project had streamlined the policy issues regarding student theses and dissertations and were uploading soft copies of graduating students while digitising the print theses retrospectively and making them accessible in the IR. Makerere University, which started digitising and

uploading theses and dissertations in the IR prior to clearing consent issues, had these items restricted in the IR, and is now advocating for mandatory self-archiving of theses and dissertations in the IR policy. As a strategy to populate the IRs, the libraries at Kenyatta University, Makerere University and Muhimbili University of Health and Allied Sciences had embarked on in-house retrospective digitisation of theses and dissertations, with funding either directly from the library or sourced from funding agencies such as SIDA at Makerere University. The IR at Makerere University started on the foundation of the digitisation unit in the library and the print theses and dissertation collection. For the other libraries, digitising the theses and dissertations was a strategy of adding full-text to the already established repository of metadata content and this has helped improve open access.

Lack of human resource (expertise) to develop, implement and manage IRs in East Africa was one of the factors that were affecting the adoption of open access as stipulated by UNESCO on the Global Open Access Portal. However, the intervention of organisations such as INASP and EIFL, in addition to international partner universities and funding agencies, working in collaboration with library consortia in Kenya, Tanzania and Uganda (Kenya Library & Information Services Consortium – KLISC, Consortium of Tanzania Universities and Research Libraries – COTUL, Consortium of Uganda University Libraries – CUUL) have helped build capacity for the librarians to plan, implement and manage repositories, as well as develop open access policies. Institutions that initiated repositories in the early 2000's did not start with policies and this affected the implementation of open access. With the training and guidance provided so far, the situation is improving, with universities that have open access policies hoping to yield more content in the repositories.

Institutional repository projects in East Africa have been initiated by individual universities, with libraries in collaboration with the institutional IT departments, either engaging the university administration or finding other means of funding the project. Westell (2006) noted that this was a more sustainable funding model for archiving scholarly materials and providing access through an institution-supported platform, which would have been assessed for the projected institutional content storage and backup requirements, and centrally funded as IT utilities that benefit all members of the university community. Although getting funding for IR projects makes the adoption process faster, internal funding helps the institution to strategically plan how the project will be sustained. A number of universities in Kenya, both big and small have managed to setup and sustain repositories and others can emulate from them.

Researchers who have been sensitized about the benefits of self-archiving and the anticipated long-term preservation of literature are positive about open

access in IRs. The majority of the respondents in the author's PhD study (97% at Makerere University, 91% at Kenyatta University and 100% at MUHAS) agreed to provide open access to content in institutional repositories or promised to share their scholarly information, however, they need to be followed up for action. Adoption of open access among researchers has been high in some disciplines (health as evidenced from the level of open access at MUHAS) than others, probably because of the culture of publishing and the open access mandates enforced by funding agencies that are more accessible in the health sciences. Strategies of breaking the resistance to self-archiving in other disciplines need to be explored in order to expand the horizon of open access.

Challenges

As observed from the 2013/2014 EIFL-SPIDER project while setting ground for the 2016/2018 project, "the momentum to embrace open access (OA) initiatives in Kenya, Tanzania and Uganda had been building up, but the growth of digital content, accessible via the internet, was still slow" (EIFL, n.d.). Some of the expressed reasons as to why this was so include the fact that, it was sometimes difficult to get researchers to agree to share their work, especially when there were no open access policies operating within the institution. Although the EIFL-SPIDER project had succeeded in having institutions draft IR policies, some of them had stagnated because it was essential to involve all stakeholders but bureaucratic to achieve. The inability to implement the drafted policies was slowing content collection and affecting open access in the IR. The absence of government and/or funder mandates in East Africa has also affected the collection and provision of open access in IR's. Otanda, Muneja and Kuchma (2015) in their presentation reporting about the EIFL-SPIDER 2013/2014 project (Open access in Kenya, Tanzania and Uganda) noted that there was no open access enabling environment with the absence of open access country policies in Kenya, Tanzania and Uganda to guide institutions on how to proceed. Haas (as cited in Westell, 2006, p. 214) noted that "if all major funding agencies mandated deposition, it was likely that major repositories could be developed rapidly." Some of the policies lacked mandatory provisions to deposit content in the repository rendering the archiving process to remain voluntary. Tracking of publications from individual researchers in the institution, and from the various publishers scattered the world over was also noted as a slow and tedious task.

Lack of awareness of open access institutional repositories among researchers and academicians, and the limited staff involved in the repository activities were also part of the reasons why there was low content in the IR and therefore less open access. The majority of the respondents in the author's PhD study (91% at Makerere University, 98% at Kenyatta University and 86% at MUHAS) expressed need for awareness building about open access and institutional

repositories. Librarians have not adopted the practice of developing informational websites to guide users on how open access is being implemented in the university and how they can participate. Dependence on one-on-one, seminars and workshops, e-mails and print marketing materials are not sufficient when trying to reach the wider university community. Websites on open access and how it applied to individual institutions could be a good and permanent source of information and easy pointer for those who might not be able to attend face-to-face workshops. Dulle (2010) recommended linking open access information sources to library websites for users to access. This could be an easy way of getting researchers to find information on open access from one location, which off course could still be distributed through promotional materials like leaflets and brochures. Abrizah (2009) recommended providing FAQs (Frequently Asked Questions) covering topics such as ownership of copyright, the use of creative commons licenses while providing open access, self-archiving and the exposure of plagiarism, preservation of materials and file security, how to determine what to self-archive using the SHERPA/RoMEO list of journal publishers' self-archiving policies.

Shearer (2003) argued that the number of staff engaged in advocating and promoting the repository affected the visibility and growth of the repository. It was established that the staff working on the IR activities in universities in East Africa were limited to a few librarians who had been assigned the responsibilities of the IR, with minimal or no support from the reference or other librarians especially in marketing and soliciting for IR content. Giesecke (2011) pointed out that repository staffing should be composed of those with direct responsibility for the daily operation of the services and those who have new responsibilities added to their positions to support the service, such as marketing roles, contributing metadata and providing training. Librarians positioned in branch/faculty/college libraries often interface with researchers and are in a better position to promote the IR and open access within their locations. In fact, all categories of the IR stakeholders, such as the administrators, librarians, researchers and students should be involved in OA and IR advocacy for any success to be recorded in the institution. Otanda, Muneja and Kuchma (2015) thought it was important to incorporate students in the IR/OA advocacy strategies to reach out to research administrators, academic staff and their fellow students, however, after training them for specific events such as open access week; they do not seem to continue promoting the cause. Targeted training of trainer workshops for students in different fields could be used (as has been tried in the health discipline in Kenya – the Medical Students Association of Kenya). Efforts to sensitize the university community about the benefits of the IR and how to populate it have been made by the repository managers but the patronage from the research community has been appalling. These could be some of the reasons why some of the currently online

repositories were not registered in OpenDOAR because there was not much to show the world as yet.

Westell (2006, p. 215) noted that "one of the most difficult and time consuming tasks in populating a repository is ensuring that the appropriate copyright clearances have been sought." One of the reasons why there is more metadata only content in repositories in East Africa is because the process of contacting publishers for permission to self-archive was minimally, if not done at all. Once repository managers establish that a particular publisher does not favour self-archiving of the publisher's PDF which is in most cases the only available option, they neither contact the author(s) for other versions nor contact the publisher. The end result is adding the metadata and uploading the abstract, which is already part of the metadata. An essential component of repositories is that they are dependent on permissions from others. Before content is deposited in an IR, permission should be sought from the copyright owner, and in a university setting, this may include university administration, staff, students and publishers. For journal publications, these are some of the expected procedures to follow: First check for the publisher self-archiving requirements from either the SHERPA/RoMEO database or the publisher's website. If conditions do not favour immediate self-archiving of the publisher's PDF, then contact the publisher for permission/clarification. If other versions of the article can be self-archived, contact the author(s) for those versions. Always add publisher statements and website links to the metadata. For publishers/journals where most of the researchers in a university tend to publish, request for blanket institutional permission to self-archive in the repository.

Most universities in East Africa have adopted using the DSpace software, which is freely downloadable but not easy to install and maintain. The libraries mostly depend on the university IT department, which are often already over-burdened with other IT systems and therefore offer divided attention, slowing the whole process. Some new universities in Uganda interested in setting up IRs fail to get IT personnel to install the software and have to seek for assistance from either older universities that have repositories or the Consortium of Uganda University Libraries (CUUL), which is still planning to form a pool of skilled DSpace IT personnel to promote IRs within the country. The inability to build IT capacity within the library to initiate and sustain IR projects is limiting the open access adoption process in East Africa.

Conclusion

In the electronic information environment, library users are interested in easily accessing full-text information resources, and these should be readily available from institutional repositories. Emphasis should therefore be placed on processes that promote open access deposits in repositories. Institutionally

mandated deposits are essentially required if universities in East Africa would like to move beyond the slow and time consuming self-driven/voluntary process of collecting content and increase the visibility and accessibility of scholarly information locally produced to enhance development within the region. Staff participation in IR activities and collaboration in self-archiving or providing their scholarly information for mediated archiving are essential for open access. For student theses and dissertations, requiring deposit in the IR as a condition before one graduates, would maximise content collection and growth.

The way forward / recommendations

There is need to involve more stakeholders in the advocacy for self-archiving and open access in the IR. Engaging the students and researchers in sensitizing their fellow colleagues and involving more librarians in the marketing of the repository could go a long way in reaching a wider community of the university. This worked quite well at the University of Kansas Libraries (Emmett, Stratton, Peterson, Church-Duran & Haricombe, 2011), the Grand Valley State University in Michigan (Beaubien, Masselink, & Tyron, 2009) and at the University of Oregon Libraries (Jenkins, Breakstone & Hixson, 2005).

There should be a top-down development of open access policies, beginning with government and funding agencies to smoothen the process that institutions take to develop IR policies because then, the IR stakeholders would have prior knowledge about OA policies and would easily pass and implement IR policies.

Advocacy for institutional repository adoption in universities in East Africa should be re-enforced by engaging administrators and researchers and combined with assisted efforts to install the software for institutions that do not have the IT capacity. DSpace is the commonly used software, and IT capacity to install, maintain, trouble shoot and upgrade can be built within the library consortia, with guidance from the DSpace technical support group.

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Appendix

Status of Online Institutional Repositories in Universities in Kenya, Tanzania and Uganda by 30th March 2018

Public and Private Chartered Universities in Kenya

No.	University name	Year established	IR Online	No. of Items in IR
	PUBLIC CHARTERED UNIVERSITIES IN KENYA			
1	University of Nairobi	1970	Yes	84,705 items
2	Moi University	1984	Yes	847 items
3	Kenyatta University	1985	Yes	13,953 items
4	Egerton University	1987	Yes	817 items
5	Jomo Kenyatta University of Agriculture and Technology	1994	No	Dead Link
6	Maseno University	1991	Yes	323 items

No.	University name	Year established	IR Online	No. of Items in IR
7	Chuka University	2007	No	
8	Dedan Kimathi University of Technology	2007	No	Dead Link
9	Kisii University	2007	No	Dead Link
10	Masinde Muliro University of Science and Technology	2007	Yes	136 items
11	Pwani University	2007	Yes	367 items
12	Technical University of Kenya	2007	Yes	873 items
13	Technical University of Mombasa	2007	Yes	10,223 items
14	Maasai Mara University	2008	Yes	5,057 items
15	Meru University of Science and Technology	2008	No	
16	Multimedia University of Kenya	2008	No	
17	South Eastern Kenya University	2008	Yes	3,539 items
18	Jaramogi Odinga University of Science and Technology	2009	No	
19	Laikipia University	2009	No	
20	University of Kabianga	2009	No	
21	Karatina University	2010	Yes	325 items
22	University of Eldorat	2010	No	Dead Link
23	Kibabii University	2011	No	
24	Kirinyaga University	2011	Yes	91 items
25	Machakos University	2011	Yes	81 items
26	Murang'a University of Technology	2011	Yes	2,846 items
27	Rongo University	2011	No	Dead Link
28	Taita Taveta University	2011	Yes	130 items
29	The Co-operative University of Kenya	2011	No	Dead Link
30	University of Embu	2011	Yes	1,829 items
31	Garissa University	2011	No	Dead Link
PRIVATE CHARTERED UNIVERSITIES IN KENYA				
32	University of Eastern Africa, Baraton	1989	No	
33	Catholic University of Eastern Africa (CUEA)	1989	No	

No.	University name	Year established	IR Online	No. of Items in IR
34	Daystar University	1989	Yes	1,148 items
35	Scott Christian University	1989	No	
36	United States International University (USIU) - Kenya	1989	Yes	3463 items
37	Africa Nazarene University	1993	No	
38	Kenya Methodist University	1997	Yes	Can't tell
39	St Paul's University	1989	Yes	569 items
40	Pan Africa Christian University	1989	No	
41	Kabarak University	2002	Yes	1,268 items
42	Strathmore University	2002	Yes	2,163 items
43	Africa International University	1989	Yes	312 items
44	Kenya Highlands Evangelical University	1989	No	
45	Mount Kenya University	2008	Yes	5252 items
46	Great Lakes University of Kisumu	2005	No	
47	Adventist University	2005	No	
48	KCA University	2007	Yes	267 items
49	KAG – EAST University	1989	No	
INSTITUTIONS WITH LETTERS OF INTERIM AUTHORITY				
50	Management University of Africa	2011	Yes	Can't tell

Source: Commission for University Education and University Websites

Public and Private Universities in Tanzania

No.	University name	Year established	IR Online	No. of Items in IR
PUBLIC UNIVERSITIES IN TANZANIA				
1	University of Dar es Salaam		Yes	4,512 items
2	Sokoine University of Agriculture		Yes	1,788 items
3	Open University of Tanzania		Yes	Can't tell
4	Ardhi University		No	
5	State University of Zanziber		Yes	67 items
6	Mzumbe University		Yes	1,686 items

No.	University name	Year established	IR Online	No. of Items in IR
7	Muhimbili University of Health and Allied Sciences		Yes	1,781 items
8	Nelson Mandela African Institute of Science and Technology		Yes	8 items
9	University of Dodoma		No	
10	Mbeya University of Science and Technology		No	
11	Moshi Cooperative University		No	
12	Mwalimu Julius K. Nyerere University of Agriculture and Technology		No	
PRIVATE UNIVERSITIES IN TANZANIA				
13	Hubert Kairuki Memorial University		No	
14	International Medical and Technological University		No	
15	Tumaini University Makumira		No	
16	St. Augustine University of Tanzania		No	Dead Link
17	Zanzibar University		No	
18	Mount Meru University		No	
19	University of Arusha		No	
20	Teofilo Kisanji University		No	
21	Muslim University of Morogoro		No	
22	St. John's University of Tanzania		No	
23	University of Bagamoyo		No	
24	Catholic University of Health and Allied Sciences		No	
25	St. Joseph University in Tanzania		No	
26	United African University of Tanzania		No	
27	Sebastian Kolowa Memorial University		No	
28	University of Iringa		No	
29	AbdulRahman Al-Sumait Memorial University		No	
30	Mwenge Catholic University		No	
31	Ruaha Catholic University		No	

No.	University name	Year established	IR Online	No. of Items in IR
32	Eckernforde Tanga University		No	
33	Aga Khan University		No	

Source: Tanzania Commission for Universities and University Websites

Public and Private Universities in Uganda

No.	University name	Year established	IR Online	No. of Items in IR
	PUBLIC UNIVERSITIES IN UGANDA			
1	Busitema University	2007	No	
2	Gulu University	2002	No	
3	Kabale University	2005	No	
4	Kyambogo University	2002	No	
5	Lira University	2012	No	
6	Makerere University	1922	Yes	5,299 items
7	Makerere University Business School	1997	Yes	No items
8	Mbarara University of Science and Technology	1989	No	
9	Mountains of the Moon University	2005	No	
10	Muni University	2013	No	
11	Soroti University	2015	No	
12	Uganda Management Institute	1968	No	
	PRIVATE UNIVERSITIES IN UGANDA			
13	Africa Renewal University	2013	No	
14	African Bible University	2005	No	
15	African Rural University	2011	No	
16	Aga Khan University	2001	Yes	Can't tell
17	All Saints University, Lango	2008	No	
18	Ankole Western University	2016	No	
19	Avance International University	2017	No	
20	Bishop Stuart University	2006	No	
21	Bugema University	1994	No	
22	Busoga University	1999	No	

No.	University name	Year established	IR Online	No. of Items in IR
23	Cavendish University Uganda	2008	No	
24	Ibanda University	2014	No	
25	International Business, Science & Technology University	2011	No	
26	International Health Sciences University	2008	No	
27	International University of East Africa	2010	No	
28	Islamic University in Uganda	1988	No	
29	Kampala International University	2001	Yes	318 items
30	Kampala University	2000	No	
31	Kiyiwa International University	2015	No	
32	Kumi University	2004	No	
33	Lira University	2015	No	
34	LivingStone International University	2011	No	
35	Metropolitan International University	2017	No	
36	Muteesa I Royal University	2007	No	
37	Ndejje University	1992	No	
38	Nile University	2018	No	
39	Nkumba University	1999	No	
40	Nsaka University	2013	No	
41	St. Augustine International University	2011	No	
42	St. Lawrence University	2007	No	
43	Stafford University Uganda	2015	No	
44	Team University	2015	No	
45	Uganda Christian University	1997	Yes	110 items
46	Uganda Martyrs University	1993	Yes	149 items
47	Uganda Pentecostal University	2005	No	
48	University of the Sacred Heart Gulu	2016	No	
49	Uganda Technology and Management University	2013	No	
50	Valley University of Science & Technology	2015	No	
51	Victoria University Uganda	2010	No	

No.	University name	Year established	IR Online	No. of Items in IR
52	Virtual University of Uganda	2011	No	

Institutional Repositories Registered in the Directory of Open Access Repositories from Kenya, Tanzania and Uganda

By 30th March 2018, the Directory of Open Access Repositories had 28 repositories from Kenya, 10 from Tanzania and 2 from Uganda.

Kenya

1) **Dedan Kimathi University of Technology** - http://www.dkut.ac.ke/ [Dead Link]
   a. *Dedan Kimathi University of Technology Digital Repository* http://repository.dkut.ac.ke:8080/xmlui/?Itemid=250/
2) **Egerton University** - http://www.egerton.ac.ke/
   a. *Egerton University Institutional Repository (EUIR)* http://ir-library.egerton.ac.ke/
3) **International Livestock Research Institute** (ILRI) - http://www.ilri.org/
   a. *Mahider* http://mahider.ilri.org/handle/10568/1
4) **Jomo Kenyatta University of Agriculture and Technology (JKUAT)** - http://www.jkuat.ac.ke/ [Dead Link]
   a. *JKUAT Digital Repository* http://ir.jkuat.ac.ke/
5) **Karatina University** - http://www.karu.ac.ke/
   a. *KarUSpace* http://41.89.230.28:8080/xmlui/
6) **KCA University** - http://www.kca.ac.ke/
   a. *KCA Academic Commons* http://41.89.49.13:8080/xmlui/
7) **Kenya Agricultural Research Institute** (KARI) - http://www.kari.org/
   a. *KARI e-repository* http://www.kari.org/index.php?q=content/kari-e-repository
8) **Kenya Human Rights Commission** - http://www.khrc.or.ke/
   a. *Kenya Human Rights Commission Institutional Repository* http://resource.khrc.or.ke:8181/khrc/
9) **Kenya Institute of Management** - https://www.kim.ac.ke/
   a. *KIM Repository* http://41.89.43.7/
10) **Kenyatta University** - http://www.ku.ac.ke/
   a. *Kenyatta University Institutional Repository* http://ir-library.ku.ac.ke/

11) **Kisii University** - http://www.kisiiuniversity.ac.ke/ [Dead Link]
    a. ***Kisii University Digital Repository***
       http://41.89.196.16:8080/xmlui/
12) **Lake Victoria Basin Commission** - http://www.lvbcom.org/
    a. ***Lake Victoria Basin Commission (LVBC) Repository***
       http://195.202.82.11:8080/jspui/handle/123456789/12
13) **Maasai Mara University** - http://www.mmarau.ac.ke/
    a. ***Maasai Mara University Institutional Repository***
       http://41.89.101.166:8080/xmlui/
14) **Masinde Muliro University of Science and Technology** -
    http://www.mmust.ac.ke/
    a. ***Masinde Muliro University of Science and Technology Digital Repository***
       http://ir-library.mmust.ac.ke/
15) **Moi University** - http://www.mu.ac.ke/
    a. ***Moi University Institutional Repository***
       http://ir.mu.ac.ke/
16) **Muranga University of Technology** - http://mut.ac.ke/
    a. ***MUT INSTITUTIONAL REPOSITORY***
       http://repository.mut.ac.ke:8080/xmlui/
17) **Pwani University** - http://www.pu.ac.ke/
    a. ***Pwani University Institutional Repository***
       http://elibrary.pu.ac.ke/ir/
18) **Rift Valley Institute** - http://www.riftvalley.net/
    a. ***Sudan Open Archive** (SOA)*
       http://www.sudanarchive.net/
19) **South Eastern Kenya University** - http://www.seku.ac.ke/
    a. ***South Eastern Kenya University Digital Repository***
       http://repository.seku.ac.ke/
20) **St. Pauls University** - http://www.spu.ac.ke/
    a. ***St. Paul's University Institutional Repository***
       http://41.89.51.173:8080/xmlui/
21) **Strathmore University** - http://www.strathmore.edu/
    a. ***SU+ Digital Repository***
       https://su-plus.strathmore.edu/
    b. ***SU-Portal***
       https://su-plus.strathmore.edu/
22) **Technical University of Kenya** - http://tukenya.ac.ke/
    a. ***Tukenya Institutional Repository***
       http://repository.tukenya.ac.ke/
23) **Technical University of Mombasa** - http://www.tum.ac.ke/
    a. ***Technical University of Mombasa Institutional Repository (IR@Tum)***
       http://ir.tum.ac.ke/
24) **The Management Univesity of Africa** - http://www.mua.ac.ke/
    a. ***The Management Univesity of Africa Repository***
       http://repository.mua.ac.ke/
25) **United States International University - Africa** - http://www.usiu.ac.ke/

      a. ***USIU Africa Digital Repository*** *(USIU)*
        http://erepo.usiu.ac.ke/
26) **University of Eldoret** - http://www.uoeld.ac.ke/karibu/ [Dead Link]
      a. ***University of Eldoret Institutional Repository***
        http://41.89.164.122:8080/xmlui/
27) **University of Embu** - http://www.embuni.ac.ke/
      a. ***Embu University Repository***
        http://repository.embuni.ac.ke/
28) **University of Nairobi** - http://www.uonbi.ac.ke//
      a. ***University of Nairobi Digital Repository***
        http://erepository.uonbi.ac.ke/

Tanzania

1) **Ifakara Health Institute** - http://www.ihi.or.tz/
      1. ***Digital Library of the Tanzania Health Community*** *(e-Health)*
        http://ihi.eprints.org/
2) **Muhimbili University of Health and Allied Health Sciences** (MUHAS) - http://www.muhas.ac.tz/
      1. ***MUHAS Institutional Repository***
        http://ir.muhas.ac.tz:8080/jspui/
3) **Mzumbe University** - http://web.mzumbe.ac.tz/
      1. ***Mzumbe University Scholar Repository***
        http://scholar.mzumbe.ac.tz/
4) **Nelson Mandela -African Insitution of Science and Technology** - http://www.nm-aist.ac.tz/
      1. ***NM-AIST Repository***
        http://dspace.nm-aist.ac.tz/
5) **Open University of Tanzania** - http://www.out.ac.tz/
      1. ***Digital Library of Open University of Tanzania***
        http://repository.out.ac.tz/
6) **Saint Augustine University of Tanzania (SAUT)** - http://www.saut.ac.tz/
      1. ***Mario Mgulunde Learning Resource Centre Repository*** *(MLRC Instititutional Repository)*
        http://41.59.3.91:8080/xmlui
7) **Sokoine University of Agriculture** - http://www.suanet.ac.tz/
      1. ***Sokoine University of Agriculture Institutional Repository***
        http://www.suaire.suanet.ac.tz/
      2. ***TaCCIRE*** *(Tanzania Climate Change Information Repository)*
        http://www.taccire.suanet.ac.tz/xmlui
8) **TANZANIA COMMISSION FOR AIDS** (TACAIDS) - http://www.tacaids.go.tz/
      1. ***TACAIDS Digital Repository***
        http://tacaidslibrary.go.tz/
9) **THE STATE UNIVERSITY OF ZANZIBAR (SUZA)** - http://www.suza.ac.tz/
      1. ***SUZA REPOSITORY***
        http://repository.suza.ac.tz:8080/xmlui/

10) **University of Dar es Salaam** - https://udsm.ac.tz/
    1. ***University of Dar es Salaam***
       http://repository.udsm.ac.tz:8080/xmlui/

Uganda

1) **Makerere University** - http://www.mak.ac.ug/
    1. ***Makerere University Institutional Repository*** *(Mak IR)*
       http://makir.mak.ac.ug/
2) **Regional Universities Forum for Capacity Building in Agriculture** -
   http://www.ruforum.org/
    1. ***RUFORUM Institutional Repository***
       http://repository.ruforum.org/