

AFRICAN DIGITAL RESEARCH REPOSITORIES: SURVEY REPORT

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INTRODUCTION

Institutional repositories are an increasingly significant component in the provision of academic publication and information resources. They are being developed throughout the world as a consequence of the availability of scholarly resources in digital formats, and in response to Open Access policies and mandates.

Within the African continent, the Council for the Development of Social Science Research in Africa (CODESIA) recently issued an 'Open Access Declaration' following a conference held in 2016, sponsored by UNESCO.¹ The declaration can be read in conjunction with UNESCO and the Confederation of OA repositories (COAR)'s joint statement on OA,² which stresses the value of repositories in an OA environment, advocating less focus on developing journals and more on repositories. In contexts where resources for traditional publications are lacking, freely accessible research outputs via such repositories may offer considerable potential.³

To gain a better sense of the existing institutional repository landscape in Africa, the International African Institute (IAI) first collated and published on the IAI website a list of all known institutional repositories,⁴ represented in numerical terms by country as follows:

Algeria: 1; Botswana: 1; Burkina Faso: 1; Cameroon: 1; Cape Verde: 2; Egypt: 5; Ethiopia: 2; Ghana: 5; Kenya: 16; Malawi: 1; Morocco: 3; Mozambique: 1; Namibia: 2; Nigeria: 14; Senegal: 3; Sierra Leone: 2 (1 of which is not yet live); South Africa: 36; Sudan: 5; Tanzania: 8; Togo: 1; Tunisia: 1; Uganda: 2; Zambia: 1; Zimbabwe: 8 (Total: 122). The full list is included as **Appendix 1**.

There are no known repositories in the following 27 African countries: Angola, Benin, Burundi, Central African Republic, Chad, Comoros, Congo Brazzaville, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Gabon, Gambia, Guinea, Guinea Bissau, Lesotho, Liberia, Libya, Madagascar, Mali, Mauritania, Mauritius, Niger, Seychelles, Somalia, South Sudan, Swaziland.

We also set up an 'Expert Advisory Panel' to guide and steer the project.⁵ We then decided to start a survey among a selected number of repositories listed on the IAI website.

We approached more than 50 institutions (mainly university libraries) in 24 countries in the African continent with questionnaires in English, French and Portuguese. The main difficulty was finding the repositories managers' contact emails and making sure these were correct, and/or working correctly. Thanks to members of the IAI's Expert Advisory Panel and to contacts established at the aforementioned conference held earlier in 2016 by

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¹ See <http://codesria.org/spip.php?article2595>

² http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/news/coar_unesco_oa_statement.pdf

³ A good overview of the 'case' for repositories being established in African universities by John Paul Anbu K of the University of Swaziland is available at <http://www.ascleiden.nl/Pdf/elecpublconfanbu.pdf>

⁴ <http://www.internationalafricaninstitute.org/repositories.html>

⁵ <http://www.internationalafricaninstitute.org/repositories/experts.html>

CODESRIA on Open Access,⁶ our survey managed to reach some other repositories we had not previously taken into consideration. This showed how important direct personal connection still is with people working within certain institutions in order to reach the right persons.

In total, 18 institutions and universities responded to our request so representing about a third of the institutions approached: 3 institutions compiled a short questionnaire (comprising 5 questions) and 15 institutions compiled a longer survey (29 questions).⁷ The draft questions are included as **Appendix 2**.

GENERAL RESULTS

Of the 18 different repositories and institutions which have participated in our survey:

- 100 per cent operate an Open Access policy (several have embargo accommodation policies and one does not allow download of items). The repositories with licencing policies in place are mainly using Creative Commons; repositories otherwise endeavour to respect national and publisher copyright policies.
- All the university repositories include theses, both at Master's and doctoral levels. At least 80 per cent have a requirement in place for candidates when completing Master's or PhD degrees to deposit their thesis. In many cases such deposit is required to be awarded the degree.
- A variety of other material is stored including journal articles, reports and older material produced prior to the creation of the repository.
- Software: 14 repositories use DSpace,⁸ 2 use Eprints,⁹ 2 use Greenstone¹⁰ (Sierra Leone, not live yet, see below).
- Almost a third of the repositories face issues with software updates when using new versions of DSpace. Additional IT problems in some countries include broadband availability and speeds, affecting the operation of repositories.
- Staff numbers within the university repositories are usually modest, involving one or two members of staff. Around a third face difficulties with staff shortages and a lack of training for the staff. Librarians often have to do extra work for the repository; or traditional librarians and support staff may not be fully supportive of repository initiatives.
- Around half the repositories have a preservation plan in place; others are working on policies for preservation.
- In general, the repositories receive more support from the highest level of the university than from academic staff. Policies that positively incentivise academics to deposit their work (e.g. that are linked to promotion and advancement) improve staff engagement with the repository.
- Aggregation and search – the picture is mixed with some repositories (particularly in South Africa) configured to a standard that can be harvested by national, regional or international repositories. Overall though, much remains to be done to render repositories more useful as research tools in terms of promoting them through national and international aggregators and libraries, via subject repositories and internet-based indexes and search engines. More opportunities for repository managers to meet and network regionally and continentally, both in person and virtually, would be a positive step.
- Work also needs to be done by repository managers, university administrations and leaders, as well as via scholarly journals, to spread understanding amongst academics of the potential benefits of repositories. And worries need to be allayed about plagiarism.

⁶ <http://www.codesria.org/spip.php?rubrique257&lang=en>, attended by Stephanie Kitchen.

⁷ <https://esurv.org/?u=MappingRepositoriesInAfrica>

⁸ <http://www.dspace.org/>

⁹ <http://www.eprints.org/uk/>

¹⁰ <http://www.greenstone.org/>

- Limited funding is the main barrier to digitizing materials produced prior to the creation of the repository. The majority of the repositories would however like to engage in such retrospective digitization of hard copy materials.

INDIVIDUAL RESULTS

AAU-ETD (Addis Ababa University Libraries Electronic Theses and Dissertations Database), Addis Ababa University, Addis Ababa, Ethiopia

OAI-PMH: <http://etd.aau.edu.et/oai/request>

Link to website: <http://etd.aau.edu.et/>

Contact person: Girma Aweke, Assistant University Librarian for Technical Services, girma2121@gmail.com

The Addis Ababa University Institutional Repository is located in the Addis Ababa University Library and as of September 2016 holds 10,000 items. The repository holds only doctoral and Master's theses (full text), which are deposited by students at a rate of 70 per cent.

There is an increasing demand from students and other users to access the database. Some recent statistics show a total of 476,485 item views, 638,166 searches performed and 690 user log-ins.

The repository is Open Access. It uses DSpace software and files are hosted on a local machine in the library.

Interest has been expressed in developing the project if more funding were to be available. Indeed, the lack of a sufficient budget to digitize the entire backlog of print theses and dissertations has been highlighted as the main current issue for the repository.

This repository is in contact with the Association of African Universities¹¹ and the Directory of Open Access Repositories (OpenDOAR).¹² In terms of aggregators, a National Institutional Repository has been created in Ethiopia but is still in development.¹³

The repository employs more than four staff, including a digital librarian and an institutional repository manager, who are responsible for the day-to-day operation of the repository. While the support from the highest levels in the university is considered very good, support coming from external funders and academic staff is perceived as quite poor.

American University in Cairo Digital Archive and Research Repository, Cairo, Egypt

OAI-PMH: <http://dar.aucegypt.edu/oai/request>

Link to website: <http://dar.aucegypt.edu/>

Contact person: Ryder Kouba, ryder.kouba@aucegypt.edu

The American University in Cairo Digital Archive and Research Repository is located in the Rare Books and Special Collections Library within the American University, Cairo, Egypt.

It contains circa 3,500 items, comprising theses and dissertations at all levels, student research, draft or published journal articles, reports (largely for university units) and student projects, as well as other projects from various departments. These are full text and include all disciplines covered by the university.

All the students are required to deposit their theses when graduating, using, if they want to, self-deposit. Although all the students deposit their theses, only a few students and faculty members deposit journal articles and/or reports.

The library issues a 'Digital Archive and Research Repository (DAR Repository) guide',¹⁴ which includes information on Open Access and video tutorials on how to submit your thesis and scholarly articles. The library offers Open Access information. An Open

¹¹ <http://www.aau.org/>

¹² <http://www.openoar.org/>

¹³ <http://enr.aau.edu.et>

¹⁴ See: <http://libguides.aucegypt.edu/DARHome>

Access policy is in place; however, more details are not given. The repository's website mentions that 'Although we advocate Open Access, you may restrict access to your research housed in DAR for 3 months, 6 months, 1 year, 2 years, or forever'.

At the moment the repository needs two full-time-equivalent members of staff. Interest is expressed in the idea of digitizing materials that were generated in the university before the repository was set up and in developing such a project if more funding were to be available.

The repository uses the open source software DSpace which has not caused any problem so far.

Bibliothèque Numérique Université Cheikh Anta DIOP, Université Cheikh Anta Diop de Dakar, Senegal

Link to website: <http://bibnum.ucad.sn/greenstone/cgi-bin/library.cgi?site=localhost&a=p&p=about&c=theses&l=fr&w=utf-8>

Contact person: Jean Baptiste Sarr, Chef du Service de Numérisation à la Bibliothèque Centrale, jbsarr@gmail.com

This repository contains a total of 9,800 items, of which 6,746 are theses; 1,210 are memoirs; 65 are titles of journals published at the university; 1,650 are articles from researchers and lecturers; and 129 are rare and valuable books (old collections).

All the documents are fully accessible and visible, but not downloadable. A Commission is now discussing the possibility of an Open Access policy.

The deposit of theses in digital format in the repository is compulsory.

The repository has an OAI-MPH interface but is not yet registered on ROAR, OpenDOAR nor aggregated on Connecting Africa.

The main problems faced by this repository are the scarcity of appropriate infrastructure (scanners, servers, etc.), the lack of a training course on the preservation of digital documents, the shortfall of human resources and the sometimes poor internet connection, which affects speed and uploading processes.

BUSE IR, Bindura University of Science Education IR, Bindura, Zimbabwe

OAI-PMH: in place but url could not be located

Link to website: <http://digilib.buse.ac.zw:8090/xmlui/>

Contact persons: Blessing Chiparausha, Deputy Librarian, bchiparausha@gmail.com / bchiparausha@buse.ac.zw; Justice Kasiroori, Technology Librarian, jkasiroori@gmail.com / jkasiroori@buse.ac.zw

This repository currently holds 747 theses and dissertations, 372 draft or published journal articles and 13 conference papers, giving a total of 1,131 items (either as full text or as listed items held as physical copies). All the items come from the Faculty of Agriculture and Environmental Science, the Faculty of Commerce, the Faculty of Science Education, the Faculty of Sciences or the Faculty of Social Sciences and Humanities.

As part of the university examinations regulations, students are required to submit print and electronic versions of their theses to the library. The electronic version is then uploaded on the Institutional Repository. Self-deposit is not yet allowed but there are plans to develop this possibility.

While there is a rate of 60 per cent deposit of theses and 50 per cent of journal articles, no reports are submitted.

There is an Institutional Repository Policy which deals with Open Access and the repository uses the Creative Commons licence. The repository is Open Access, but can accommodate embargos on full text access. The policy's permitted embargo period for science, technology and medicine is 6 months; the policy's permitted embargo length for humanities and social sciences is also 6 months.

The repository has no direct link from the library. The repository is registered with ROAR, OpenDOAR, and Connecting Africa and is aggregated to other platforms (but no further details were provided). The Research Council of Zimbabwe¹⁵ has already started a

¹⁵ <http://researchdatabase.ac.zw/>

project to create a national repository which aggregates participating universities' repositories.

The repository uses DSpace, which presents problems mainly with usage statistics. Other problems include an unstable internet connection and irregular electricity supplies as back-up power is not reliable.

Due to financial constraints, the duties of managing the repository are shared between several library staff (deputy librarian, technology librarian, faculty librarians), although the ideal situation would be to have a full-time staff member responsible for managing the repository.

The support from the highest level of the university is considered good, although support from the research community and students is considered inadequate – more would be expected from them by the repository's staff.

There is an increasing interest in accessing and using the repository's services; however, demand is still low, especially at the local level. The repository's staff expect faculty to use the content available on the repository for teaching and learning purposes.

Since a lot of developments are taking place in repositories management, a blog/platform where African/ist university digital repositories managers can share views and opinions would be welcome as a very useful initiative.

Covenant University Repository, Ota - Ogun State, Nigeria¹⁶

Link to website: <http://eprints.covenantuniversity.edu.ng/>

Contact person: Mrs Asaolu Aderonke, Senior Librarian Reference/Digital Resources Librarian, aderonke.asaolu@covenantuniversity.edu.ng

This repository holds about 5,000 items, including full text theses, dissertations, journal articles and book chapters or full-length books, regarding all disciplines covered by the university.

Doctoral theses are uploaded onto the repository as soon as the PhD is awarded, 'only after passing a Turnitin test of at most 26% plagiarism'.

The repository is Open Access, but does sometimes accommodate embargoes on full text access.

Self-deposit is allowed and a rate of 90 per cent of students, researchers or other faculty members' publications are now included in the repository. All items are available under the Creative Commons licence. The repository is registered with ROAR, OpenDOAR and Connecting Africa.

The repository requires the work of 3 members of staff. The support received both from the highest levels in the university and the academic staff has been good.

CUTIR, Chinhoyi University of Technology Library Institutional Repository Chinhoyi, Zimbabwe

Link to website: <http://cutir.cut.ac.zw:8080/xmlui/>

Contact person: Wilbert Zvakafa, Acting Deputy Librarian, Chinhoyi University of Technology, wzvaka@cut.ac.zw / mazvake2010@gmail.com

Repository staff:

Management: Mrs Chipu Sigudu, Assistant Librarian, Periodicals and Special Collections, tsigudu@cut.ac.zw; Mr Oswald Siziba, Senior Librarian, responsible for uploading, nsiziba@cut.ac.zw; Mr Tafadzwa Sigudu, Technical Issues, cmuvunde@cut.ac.zw

This repository and its management are located in the University Library premises. It currently holds 39 research articles, 84 dissertations, 872 items from the Information and Documentation Centre and 2,146 past examination papers (all accessible as full text).

The discipline covered are: Agricultural Sciences and Technology, Engineering and Technology, Entrepreneurship and Business Sciences, Art and Design, Hospitality and

¹⁶ Covenant University is a private Christian university and a member of the Association of Commonwealth Universities.

Recreation, Natural Sciences and Mathematics, Wildlife and Ecology and Lifelong Learning.

There is a policy in place requiring all publications that are locally produced by academics and all PhD and Master's students' theses and dissertations to be deposited. Self-deposit is not allowed. While 100 per cent of Master's dissertations and 80 per cent of doctoral theses are deposited, only about 40 per cent of publications are submitted by the academic staff.

All academics depositing their works into CUTIR have to fill in a consent form before doing so in order that issues of copyright are dealt with. Still, many academics are not yet comfortable with copyright policies, which might be affecting the rate of submission.

Although the repository is Open Access, at the moment there is no Open Access policy in place. Digitizing materials that were generated in the university before the repository was set up would be a welcome development if more funding were to be available.

The repository has contacts with other university libraries in Zimbabwe as follows: University of Zimbabwe (UZ) Library,¹⁷ National University of Science and Technology (NUST) Library,¹⁸ and the Africa University Library.¹⁹

The repository is registered on OpenDOAR but has no OAI-PMH interface. The IR staff would welcome help to set one up.

The repository receives excellent support from the highest levels in the university and good support from academic staff.

The repository requires 2 members of staff, one responsible for uploading items and another person in charge of technical issues.

Some of the main problems affecting the repository are the slow connection affecting the download speed and other technical issues related to the ICT department, such as the connection with the ICT server.

The repository lacks wider support and networks. The idea of a blog whereby African/ist university digital repositories managers share views has been welcomed as an opportunity to discuss topics and create connections amongst other archivists.

The contact person who completed the survey wrote 'I would be very pleased if you can link me to major repositories so that we can partner with them or they can provide us with funding to digitize all materials that were there before we started CUTIR'. When the repository faces serious technical challenges, the person in charge of technical issues travels to the biggest university in the country to ask for additional support.

To avoid data loss, a back-up is made every day before staff leave the office.

Statistics available: search statistics: total 578; search statistics for 6 months, 252.

Digital Initiatives Register and Heritage Repository, National Research Foundation, South Africa

OAI-PMH: <http://digi.nrf.ac.za/dspace/oai/request?verb=Identify>

Link to website: <http://digi.nrf.ac.za/>

Contact persons: Isaac Nkadimeng, Senior Information Specialist D&C, isaac.nkadimeng@nrf.ac.za; Kataila Ramalibana, Senior Information Specialist IR, kataila.ramalibana@up.ac.za

The Digital Initiatives Register and Heritage Repository is part of the National Research Foundation (NRF), based in Pretoria, South Africa.

This section of the NRF is now at its implementation stage. It currently holds 60 items, regarding Biodiversity and Natural Science, History and Political History. There are both full text items and lists of items held as physical copies.

The repository is completely Open Access and statistics are collected to understand the usage of the repository.

¹⁷ <http://library.uz.ac.zw/>

¹⁸ <http://ir.nust.ac.zw/xmlui/>

¹⁹ <http://library.africa.edu/>

Currently there is the intention to prepare an inventory on what needs to be digitized and, if support or funding were available, the digitization of older items preceding the creation of the repository is something that would be pursued.

This repository is not yet aggregated on any platform or registered on OpenDOAR, ROAR or Connecting Africa.

The repository uses DSpace software. The main problem faced is the software upgrade. The main licence used is Creative Commons.

ECA Knowledge Repository, Addis Ababa, Ethiopia

OAI-PMH: <http://repository.uneca.org/oai/request?verb=Identify>

Link to website: <http://repository.uneca.org>

Contact persons: Irene Onyancha, ionyancha@uneca.org; Ahmed Al-Awah, aal-awah@uneca.org

Since this is the repository of the United Nations Economic Commission for Africa, and thus not connected with any university, it does not contain theses or dissertations, nor book chapters or full-length books. Instead, it holds 18,000 items, including materials such as international reports, United Nations Economic Commission for Africa publications, parliamentary documents, policy briefs, flagship publications, conference proceedings, speeches, press releases, technical reports, mission reports, annual reports, working papers, speeches and a few draft or published journal articles. All texts are fully available and accessible, as well as downloadable. Another 16,000 items have been catalogued but not made visible in the repository. Since 2010, the repository has been dealing with a huge backlog of older material dating back to 1958.

The licence used is Creative Commons. An Open Access policy is under development. Self-deposit is not allowed and so submissions are always processed by the library (the Knowledge & Library Services Section). Since they do not follow the standard submission process they use batch imports to import metadata catalogued in their ILMS (Integrated Library Management System). The process is then completed in the repository by uploading the digital files of the respective metadata. More than 270 records are created per week.

The format required is .pdf, but the repository is now moving towards new ways of incorporating multimedia objects. The repository team is currently developing a multimedia repository to archive photos, audio and visual materials.

The repository staff have developed 'two workflows to address historical and current publications. The first workflow works backwards from 2010 and incorporates the historical publications including the digitization of historical materials. The second workflow addresses publications from 2010 forward until the current time. Future intentions include the development of offline mirrors of the repository to address the need to avail publications in areas with limited or no Internet access. The mirrors would use an offline script to allow for the replication of publications across all offline and online instances of the repository'.

All usage statistics are available on the repository website and can be seen at the overall repository level, community level, collection level and item level. The repository also employs Almetrics for tracking social media statistics. Country-level statistics are tracked at each level of the repository.

The repository is managed by the Knowledge & Library Services Section while the servers are hosted within the central IT data center.

The repository is in contact with the International Livestock Research Institute²⁰ and Addis Ababa University in Ethiopia. The repository is also part of an international initiative called Access to Scientific and Socioeconomic Information on Africa (ASKIA).²¹ ASKIA also works as an aggregator on which the ECA repository is registered. It has not registered with ROAR,²² OpenDOAR or Connecting Africa,²³ but is planning to do so very soon.

²⁰ <http://www.ilri.org/ethiopia>

²¹ For more information, see <http://askia.uneca.org>.

²² <http://roar.eprints.org/>

²³ <http://www.connecting-africa.net/index.htm>

At the moment the repository employs 18 members of staff: 2 professional officers and 16 general staff (indexers, cataloguers, scanners, staff performing Quality Assurance, etc.). It is fully internally funded.

The software used is DSpace and the ECA computers work with the operating system SUSE Linux.

The only problem encountered is related to irregular electricity supplies; but the risk of data loss is limited by the presence of a generator. Based on the usage statistics available, there is a large demand for resources within the repository.

The creation of a blog whereby African/ist university digital repositories managers could share views and information, and discuss problems, is considered a very interesting initiative.

IR@Tum - Technical University of Mombasa Institutional Repository, Mombasa, Kenya

OAI-PMH: <http://ir.tum.ac.ke/oai/request?verb=Identify>

Link to website: <http://ir.tum.ac.ke>

Contact persons: Dr. Wanyenda Chilimo, University Librarian, Repository Manager, wanyenda@gmail.com; Jonathan Limo, System Librarian, IT Support, jonathan.limo@tum.ac.ke

The repository is hosted and managed in the library and holds circa 5,550 items, comprising Master's dissertations, journal articles, full-length books and past examination papers. The repository includes a combination of full text and lists of items held as physical copies in the library.

There is no link to the repository from the library catalogue. Self-deposit is allowed with pdf files, but other formats for pictures, videos etc. are also allowed. There is a policy in place for deposit of thesis and dissertations, but the repository staff are currently working on a university-wide Open Access policy which will cover all kinds of publications. The repository is not registered on any aggregator or other platform.

There is great interest in embarking on a project of digitizing older theses originally submitted in non-electronic formats. The only constraint is limited funding.

Currently 5 members of staff are responsible for the repository alongside the other duties that they have within the library, but none of them works full-time exclusively on the digital repository.

The repository receives very good support from the highest levels in the university while just basic support from the academic staff, and inadequate support from other staff members.

Hosted on DSpace, the main problem for this repository is the lack of adequate IT expertise to configure and customize all features provided by this software or regularly update it to the most current version.

Other problems concern the shortage of technically-capable human resources, the lack of online storage capacity and problems with broadband capacity (affecting download speeds etc.). An additional problem has to do with dealing with articles published in 'questionable journals'.

The creation of a blog whereby African/ist university digital repositories managers could share views and information and discuss problems would be considered a useful tool since there is nothing similar in place within the repository's networks.

KhartoumSpace: University of Khartoum Repository

Link to website: <http://khartoumspace.uofk.edu>

Contact person: Dr Rania Mohamed Hassan Baleela Head Department DCD, ITNA, University of Khartoum.

Address: Digital Content Department (DCD), Information Technology and Network Administration (ITNA), University of Khartoum (UofK), Algamaa Street, Khartoum, Sudan.

This repository contains circa 19,888 items of which 11,414 are theses and dissertations, 3,930 are draft or published journal articles, 411 are book chapters or books and 3,207 are reports. Other deposits include University of Khartoum Journals (555), audio files (5), 'Institutes' (221), IT Service Documents (10), 'training's (6), 'University Pioneers' (113), and videos (26). All items are full text and the repository includes all disciplines covered by the University of Khartoum.

An Open Access policy has been prepared and awaits signature by the University Vice-chancellor. Open access information is provided by the Information Technology and Network Administration (ITNA) at the university. The repository is fully Open Access.

Policies are in place in relation to submissions and deposit, and it is planned that self-deposit will be encouraged in the future. There is no standard file format for deposits.

Statistics are collected at the individual item level.

In terms of rates of deposits, it is estimated that around 60 per cent of theses and dissertations are deposited, and almost all journal articles and book chapters. The policy for thesis deposits is that a thesis must be deposited after a degree is awarded as an abstract for 5 years, after which the full text will be deposited by the repository staff. As regards other publications, 'no staff member is upgraded unless his/her publications are deposited in KhartoumSpace', which presumably explains the high rates of article deposits. Support from both academic staff and high-level university administration is given the top rating (5/5).

The repository has already begun retrospective digitization of some theses originally submitted in non-electronic form as well as other material. This would be expanded should additional funding be available.

The repository is aggregated on OpenDOAR, ROAR and Connecting Africa. It offers an OAI-PMH

Interface and plans are afoot to create a national repository/aggregator in Sudan.

In terms of staffing, 4 people are required for regular maintenance of the repository.

DSpace version 5.5 is used as software, and the repository is linked from the library catalogue. Staff training is provided on the software. No other electricity or broadband/internet problems are identified. The university library/repository has an automatic electric generator. Back-up servers and a preservation plan are in place.

Copyright policies are published and accessible and all related policies can be found at: [http://khartoumspace.uofk.edu/bitstream/handle/123456789/169/Khartoum%2520Space%2520policies.pdf?](http://khartoumspace.uofk.edu/bitstream/handle/123456789/169/Khartoum%2520Space%2520policies.pdf?sequence=1&isAllowed=y)

sequence = 1&isAllowed = y

National Research Database of Zimbabwe (NRDZ), Research Council of Zimbabwe, Harare, Zimbabwe

OAI-PMH: <http://researchdatabase.ac.zw/cgi/oai2>

Link to website: <http://www.researchdatabase.ac.zw/>

Contact person: Luxmore Chiwuta, chiwutal@gmail.com

'The purpose of the National Research Database of Zimbabwe is to give broad access to and provide extensive information on Zimbabwean research, whatever the subject and place of research. Researchers are encouraged to upload their research papers/publications to the research database where possible' (extract from the website).

This repository, which aggregates content from 7 universities, 2 colleges and 3 research units within Zimbabwe, currently holds 2,662 items.

It does not have an Open Access policy at the moment because the one previously in place is being updated.

Two main problems affect the repository: convincing users to upload items and content generation.

The repository uses EPrints software and is registered on ROAR.

So far, support from academic staff and from the participating institutions has been very good.

NRF Institutional Repository, National Research Foundation, South Africa

OAI-PMH: <http://ir.nrf.ac.za/oai/request?verb=Identify>

Link to website: <http://ir.nrf.ac.za/>

Contact person: Kataila Ramalibana, kataila.ramalibana@up.ac.za

A list of all NRF contacts is available at: <http://www.nrf.ac.za/about-nrf/corporate-divisions/kmc/contact>

This repository is the Institutional Repository of the National Research Foundation (NRF), based in Pretoria, South Africa. It currently holds 318 full-text items, including: doctoral theses and Master's dissertations, draft or published journal articles, book chapters or full-length books, reports, PowerPoint presentations, as well as research datasets; the latter are provided through SADA (South African Data Archive – see below). All disciplines covered by South Africa's Universities and Scientific Institutions are included. To gain a more comprehensive idea of the academic and scientific communities, which the NRF repository harvests from, see <http://ir.nrf.ac.za/community-list>.

The repository is mainly Open Access but self-deposit is not allowed. There are 3 different ways to deposit: 1) Immediate Deposit with Immediate Open Access; 2) Later Deposit, After the Embargo Period; 3) Immediate Deposit with Optional Later Access. The main licence used is the Creative Commons one. The repository uses DSpace software, even if the main problem faced is the software upgrade.

The policy in place for the submission of theses is the National Research Foundation Open Access Mandate. More information is available about this in the Statement on Open Access to Research Publications from the National Research Foundation (NRF)-Funded Research²⁴ and the Frequently Asked Questions: Open Access Statement, issued 19 January 2015.²⁵

This repository is aggregated on other platforms, works as an aggregator for South Africa and is registered on OpenDOAR, ROAR and Connecting Africa.

The repository receives exceptional support from its external funders. Demand from users is growing as new items are uploaded, but older items also generate interest from the public.

South African Data Archive (SADA), South Africa

OAI-PMH: <http://sada-data.nrf.ac.za/oai/request>

Link to website: <http://sada-data.nrf.ac.za/>

Contact persons: Kataila Ramalibana, kataila.ramalibana@up.ac.za; Phindiwe Tsebe, Phindiwe@nrf.ac.za

This repository currently holds 176 Research Dataset items, both as full text and as a list of items held as physical copies. The disciplines covered are Social Sciences and Health Sciences.

The repository is Open Access but there is as yet no policy regarding this. Self-deposit is not allowed.

The repository uses DSpace software, although the main problem faced is the software upgrade. The main licence used is Creative Commons.

Demand from users is growing as new items are uploaded, but older items also generate interest from the public.

SUNScholar, Stellenbosch University, South Africa

OAI-PMH: <http://scholar.sun.ac.za/oai/request>

Link to website: <http://scholar.sun.ac.za>

Contact Persons: Mimi Seyffert-Wirth, Manager: Digital Scholarship, Stellenbosch University Library and Information Service, mseyf@sun.ac.za

²⁴ http://ir.nrf.ac.za/bitstream/handle/10907/103/oastatement_2015.pdf?sequence=1&isAllowed=y

²⁵ http://ir.nrf.ac.za/pdfs/NRF_FAQ_OA_Statement_Jan2015.pdf

The number of items held in the repository is circa 50,000 (not all are full text). These comprise about 25,000 theses/dissertations, 9,000 articles, inaugural addresses and conference proceedings. There are no books or chapters from books.

Theses have to be deposited before degrees are awarded. Self-deposit is encouraged in standard formats. Around 90 per cent of theses are deposited; and around 20 per cent of journal articles are deposited. An Open Access policy is in place, and individual items have their own copyright statements.

2015 usage statistics record 354,000 web visits and 133,000 item downloads showing that the repository is well used.

The repository is harvested by ROAR and OpenDOAR.

Academic support for the repository is rated as 3/5; and senior-level support as 4/5. There is judged to be inadequate support from other library staff.

DSpace software is used. A link from the library catalogue is provided and a preservation policy is being developed.

More retrospective digitization of older items would be possible with more funding.

UILSPACE, Repository, University of Ilorin, Kwara State, Nigeria

Link to website: www.uilspace.unilorin.edu.ng:8080/jspui

Contact person: George Eromosele, eromosele.og@unilorin.edu.ng

This repository holds over 150 items, including doctoral theses, journals, books and reports, and is located in the ELibrary section of the Library of the University of Ilorin.

These items are fully accessible and are related to all disciplines covered by the university. The theses, which can be self-deposited, are protected by a policy that covers publisher copyrights and Open Access to all intellectual outputs of the institution.

Interest has been expressed in the idea of digitizing materials that were generated in the university before the repository was set up if more funding were to be available.

In terms of aggregators, the repository is registered with OpenDOAR and is in contact with the Database of African Theses and Dissertations (DATAD).²⁶ There is no known aggregator for Nigeria.

The repository currently employs 5 members of staff. A long-term preservation plan is in place, thanks to a mirror backup server.

There is a great need for special training on customizing DSpace 4.1, since repository staff are encountering difficulties in customizing this software in a way that suits the needs of the library. The current administrator expressed the need for special training on this issue. Other problems are related to a shortage of technically-capable human resources. The administrator also commented that the repository is receiving inadequate support from the university administration, while an increasing demand to access the repository's resources has come particularly from researchers.

UNISA Institutional Repository (UnisaIR), Pretoria, South Africa

OAI-PMH: <http://uir.unisa.ac.za/oai/request>

Link to website: <http://uir.unisa.ac.za/>

Contact person: Ansie van der Westhuizen, UNISA, vdwesapj@unisa.ac.za

Link to OpenDOAR: <http://opendoar.org/id/1510/>

This repository, located within the premises of UNISA's library, holds 17,000 items, including theses and dissertations, draft or published journal articles, book chapters or full-length books, reports and a limited number of research datasets, inaugural lectures and archival materials.

All these items are accessible in full text and cover all the range of disciplines offered in the university. Moreover, students are required to submit an e-copy of their thesis or dissertation to the UnisaIR (this is a directive of library policy).

Although the repository is Open Access, it does not have an Open Access policy in place.

²⁶ <http://www.aau.org/page/database-african-theses-and-dissertations-datad>

Statistics are available only on the usage of individual items.

The IR has already started a process of digitizing a number of theses and dissertations preceding the creation of the repository itself. Nevertheless, it would be of great interest to expand this project, if more funding was available.

The NRF Portal (see above) operates as an aggregator for South Africa. The UNISA repository is harvested by NRF, NDLTD,²⁷ BASE²⁸ and OCLC²⁹ as well as Connecting Africa.

The University's support for the repository is not strong, with the highest levels in the university rated as giving basic/good support (3 out of 5); but support from academic staff and external funders is considered poor (2 and 1 out of 5).

The repository uses DSpace, but an external service provider has been contracted to give support with the software.

The lack of online storage capacity is an ongoing challenge, the current preservation plan is considered inadequate and when there are problems with data loss this is reported to the ICT team.

In terms of copyright and licences, the repository complies with South African copyright regulations; copyright notices are included in UnisaIR; and the Creative Commons licence is also sometimes used.

There has been a very high and constantly increasing demand for the resources contained within the repository: during 2015, the IR logged almost 10 million full text views.

University of Dar es Salaam Research Repository, Dar es Salaam, Tanzania

OAI-PMH: <http://repository.udsm.ac.tz:8080/oai/>

Link to website: <http://repository.udsm.ac.tz:8080/xmlui/>

Contact person: Ally Bitebo, ezedinho@gmail.com / allybitebo@udsm.ac.tz

The repository is currently holding circa 1,800 items, but many more are in the process of being uploaded. It includes (and will soon include) doctoral theses and Master's dissertations, published journal articles, book chapters or full-length books, reports, conference papers and conference proceedings. The items are a combination of both full text or lists of items held as physical copies, covering the following disciplines: Engineering, Law, Science, Social Science, Agriculture, Humanities, Education and Business.

Currently, the university holds a draft of the repository policy and the repository has no Open Access policy. There is no specific format for uploading files but self-deposit is both allowed and encouraged.

A process of digitization of the University's old research output has started (some items are already stored in the repository) and is currently ongoing. Nevertheless, more support and funding would be highly useful and appreciated.

The repository has no knowledge of aggregators.

There is only one person currently working as full-time staff on the repository.

While support from the highest levels in the university and from external funders is considered very good, the repository does not receive much support from the academic staff.

There is as yet no link to the repository from the library catalogue.

The software used is DSpace and its update to new versions has sometimes created problems. Even though DSpace's technical mailing group can provide some help, the lack of additional staff who could grant technical support within the repository's premises is another major difficulty.

Amongst other problems the repository faces are irregular electricity supplies and an often slow internet connection. Nevertheless, weekly data backups are in place in order to avoid unexpected data losses.

Although there has been increasing demand to access the repository's items, there is no licencing or copyright policy in place as yet.

²⁷ <http://www.ndltd.org/>

²⁸ <https://www.base-search.net/about/en/>

²⁹ <https://www.oclc.org/>

***University of Sierra Leone Digital Repository, Free Town, Sierra Leone
(forthcoming)***

OAI-PMH: not there yet

Link to website: not yet live

Contact Person: Miriam Conteh Morgan, miriam.conteh-morgan@usl.edu.sl

This repository is not active yet. It is currently being developed for a small pilot to take place in the coming months. It is still in the fund-seeking phase, although materials for digitizing have been identified, and some are being collected in a database.

There is no Open Access policy in place yet, but the idea and the nucleus materials of the repository came out of a mandate to make course materials available openly on the University website during a recent health emergency that necessitated the closure of all educational institutions.

The main difficulties for the project to develop so far have been the lack of skilled expertise to develop aspects of the repository and financial support to expand the initial pilot project.

Academic leadership and a few key faculties fully endorse the repository idea, although there has not yet been a formal adoption of an Open Access policy. This should be easily adopted when formally presented to the University Senate.

CONCLUDING COMMENT

This article is intended as a contribution to documenting knowledge about repositories in Africa. It is acknowledged that the landscape is large and diverse, and generalizing conclusions may not be possible. We might not easily be able to advance beyond uncertain definitions of what ‘repositories’ actually are, their different types, features and purposes. Despite best efforts, the data sample for the paper remains small, though is arguably in some senses representative. The study has not addressed at any meaningful level the ‘demand’ (e.g. from researchers) for repositories, not the scale or quality of the materials contained therein, nor their formats or user-friendliness. Nor has it broached complicated questions about the relationship between institutional repositories and other Open Access resources and academic publishing in journals and books in Africa such as by university presses,³⁰ or broader debates about the relative merits of non-commercial or institutional, versus commercial, or donor or foundation-funded, routes to publication. At an operational level, questions remain about restrictions on access, fears of plagiarism and concerns about copyright. Authors may be concerned about being able to publish materials placed in repositories elsewhere in journals or books. The authors of this study fully acknowledge these complexities. But repositories as sites for storing research materials, in particular university theses, in Africa as elsewhere, will be with us for the future and therefore will impact on researchers’ publication and dissemination strategies and be used increasingly as research tools. Those interested in Africa’s changing research, publishing, institutional and library landscapes need to take note. This modest study is intended as a step in that direction.

APPENDIX 1

KNOWN REPOSITORIES LISTED BY COUNTRY

Algeria

Bouira University Digital Space

Centre de Développement des Energies Renouvelables Bibliothèque virtuelle des Energies
Renouvelables

³⁰ The research project initiated by Africa Minds on university press publishing in Africa may offer some perspectives on this point, see <http://www.africanminds.co.za/african-university-presses/>

Centre de Recherche Scientifique et Technique en Soudage et Contrôle CSC Digital Library
 Centre de Recherche sur l' Information Scientifique et Technique (CERIST) Digital Library
 Université Abou Bekr Belkaid Tlemcen Depot institutionnel de l'Université Abou Bekr Belkaid Tlemcen UABT
 Université El-Hadj Lakhdar Batna Bibliothèque Centrale
 Université d'Algers Bibliothèque universitaire
 Université M'hamed Bougara Boumerdes (UMBB) Archives ouvertes de l'Université M'hamed Bougara Boumerdes
 University of Algiers Bibliothèque Virtuelle de l'université d'Alger
 University of Biskra, Algeria University of Biskra Theses Repository
 Mohamed-Cherif Messaadia University - Souk Ahras Center of Academic Publications

Botswana

University of Botswana University of Botswana Research, Innovation and Scholarship Archive (UBRISA)

Burkina Faso

Université Polytechnique de Bobo-Dioulasso

Cameroon

CamPuce (association for the promotion of science and humanities in African countries)
<http://eprints.campuce.org/>

Cape Verde

Ministerio do Ensino Superior Ciencia e Inovacao Portal do Conhecimento
 Universidade Jean Piaget de Cabo Verde Biblioteca Digital da Universidade Jean Piaget de Cabo Verde

Egypt

Agricultural Research Centre
 American University in Cairo (الجامعة الاميركية في القاهرة) AUC Digital Archive and Research Repository
 Rare Books and Special Collections Digital Library
 Bibliotheca Alexandrina (مكتبة الإسكندرية) Digital Assets Repository (DAR)
 Menoufia University Scholarly Publication Repository Portal

Ethiopia

Addis Ababa University AAU-ETD (Addis Ababa University Libraries Electronic Thesis and Dissertations Database)
 Economic Commission for Africa ECA repository

Ghana

Association of African Universities Database of African Theses and Dissertations (DATAD)
 University of Ghana Digital Collections

Kwame Nkrumah University of Science and Technology (KNUST) Repository, <http://dspace.knust.edu.gh:8080/>
University for Development Studies (UDS) Institutional Repository

Kenya

Africa Thesis Bank
Dedan Kimathi University of Technology Dedan Kimathi University of Technology Digital Repository
Egerton University Institutional Repository
Embu University C. Repository
International Livestock Research Institute (ILRI) Mahider Repository
Jomo Kenyatta University of Agriculture and Technology (JKUAT) JKUAT Digital Repository
Kenyatta University Kenyatta University Institutional Repository
Moi University Moi University Institutional Repository
Rift Valley Institute Sudan Open Archive (SOA)
South Eastern Kenya University South Eastern Kenya University Digital Repository
Strathmore University (SU) SU Digital Repository
Strathmore University SU-Portal
Technical University of Kenya TUKenya Institutional Repository
Technical University of Mombasa Institutional Repository
Management University of Africa Management University of Africa Repository
United States International University - Africa USIU - Africa Digital Repository
University of Nairobi University of Nairobi Digital Repository

Malawi

Malawi National Digital Repository

Morocco

Université Mohammed V - Rabat Dépôt Institutionnel - SIJIL
Université Hassan II - Casablanca
Rissalaty Thèses électroniques de l'Université Hassan II - Casablanca

Mozambique

Eduardo Mondlane University, Biblioteca Digital

Namibia

Polytechnic of Namibia Ounongo Repository
University of Namibia UNAM Scholarly Repository

Nigeria

Afe Babalola University Repository
Ahmadu Bello University ABU Zaria Research Publications
Ahmadu Bello University Institutional Digital Repository
University of Benin
Covenant University Repository
Covenant University Electronic Theses and Dissertation Repository
Federal University Ndufu-Alike Ikwo Repository

Federal University Oye-Ekiti Institutional Repository
 University of Port Harcourt Repository
 Landmark University Landmark University Repository
 University of Jos University of Jos Institutional Repository
 University of Lagos University of Lagos Institutional Repository
 University of Ilorin UILSPACE, Repository
 University of Nigeria Nsukka Open Resources

Senegal

African Institute for Economic Development and Planning IDEP Document Server
 Université Cheikh Anta Diop de Dakar (UCAD) Bibliothèque Numérique

Sierra Leone

Njala University Research
 University of Sierra Leone Forthcoming, contact Miriam Conteh-Morgan, [miriam.conteh-morgan\(at\)usl.edu.sl](mailto:miriam.conteh-morgan(at)usl.edu.sl)

South Africa

Africa Portal (collaborative project between the Centre for International Governance Innovation (CIGI) and the South African Institute of International Affairs (SAIIA))
 ASSAf (Academy of Science of South Africa)
 Scientific Electronic Library Online - South Africa (SciELO - South Africa)
 Cape Peninsula University of Technology Digital Knowledge at Cape Peninsula University of Technology
 Central University of Technology CUT Institutional Repository
 Council for Scientific and Industrial Research (CSIR) CSIR Research Space
 Durban University of Technology (DUT) DUT Institutional Repository
 National ETD (Electronic Theses and Dissertations) Portal South African Theses and Dissertations
 National Research Foundation South Africa Data Archive
 National Research Foundation Institutional Repository
 North-West University North-West University Institutional Repository (Boloka)
 Rhodes University Rhodes eResearch Repository (ReRR)
 SEALS Consortium SEALS Digital Commons
 Southern Africa Labour and Development Research Unit (SALDRU) OpenSALDRU
 Stellenbosch University Stellenbosch University SUNScholar Repository
 SUNeTD (Electronic Theses and Dissertations)
 Tshwane University of Technology TUT Digital Open Repository
 University of Cape Town OpenUCT
 UCT Computer Science Research Document Archive (UCT CS Archive)
 UCT Law Space
 University of Fort Hare University of Fort Hare Institutional Repository
 University of Johannesburg (UJ) UJDigispace
 University of KwaZulu-Natal (UKZN) Digital Innovation South Africa (DISA)
 University of KwaZulu-Natal Repository
 ResearchSpace@UKZN
 University of Limpopo University of Limpopo Repository
 University of Pretoria (UP) University of Pretoria Electronic Theses and Dissertations (UPeTD)
 UPSpace (UPSpace at the University of Pretoria)
 University of South Africa (Unisa) UnisaIR (Unisa Institutional Repository) See also: unisair.wordpress.com
 University of the Free State KovsieScholar, <http://scholar.ufs.ac.za:8080/xmlui/>

University of the Free State ETD (Electronic Theses and Dissertations)
University of the Western Cape AHERO (African Higher Education Research Online)
University of the Western Cape Research Repository (UWC Research Repository)
UWC Theses and Dissertations
University of the Witwatersrand, Johannesburg WIREDSpace (Wits Institutional Repository
on DSPACE) See also: libguides.wits.ac.za/WIREDSpace
University of Zululand UZSpace (University of Zululand Repository)
Vaal University of Technology VUT DigiResearch

Sudan

Al Neelain University Repository
Red Sea University Digital Repository of Red Sea University
Sudan University of Science and Technology Dspace at SUST University
University of Khartoum University of Khartoum Digital Repository (KhartoumSpace)
Nile Valley University Digital Repository

Tanzania

Ifakara Health Institute Digital Library of the Tanzania Health Community (e-Health)
Muhimbili University of Health and Allied Health Sciences (MUHAS) MUHAS
Institutional Repository
Nelson Mandela-African Institution of Science and Technology (NM-AIST) NM-AIST
Repository
Open University of Tanzania Digital Library of Open University of Tanzania
Sokoine University of Agriculture Sokoine University of Agriculture Institutional Repository
Tanzania Climate Change Information Repository (TaCCIR) Tanzania Climate Change
Information Repository
Tanzania Commission for Aids (TACAIDS) TACAIDS Digital Repository
University of Dar es Salaam University of Dar es Salaam repository

Togo

La recherche de l'Université de Lomé

Tunisia

Université Virtuelle de Tunis (UVT) UVT e-doc

Uganda

Makerere University Makerere University Institutional Repository (Mak IR)
Regional Universities Forum for Capacity Building in Agriculture RUFORUM Institutional
Repository

Zambia

University of Zambia University of Zambia Repository

Zimbabwe

African Capacity Building Foundation (ACBF) Virtual Library on Capacity Development

Chinhoyi University of Technology (CUTIR) Chinhoyi University of Technology
 Institutional Repository (CUTIR)
 Midlands State University Midlands State University Repository
 National University of Science and Technology (NUST) NuSpace Institutional Repository
 NuStone Digital Library (including theses and dissertations)
 Research Council of Zimbabwe National Research Database of Zimbabwe
 University of Zimbabwe University of Zimbabwe Institutional Repository
 Zimbabwe Open University ZOU SPACE: Institutional Repository

APPENDIX 2

QUESTIONNAIRE FOR REPOSITORY MANAGERS

Dear Repository Manager,

Greetings from the International African Institute (IAI), London. As a learned society working with the Centre of African Studies (CAS), both housed within the School of Oriental and African Studies (SOAS), we are compiling some resources on repositories from Africa. See <http://www.internationalafricaninstitute.org/repositories.html>

This is the first stage of a project to learn about and promote such repositories as part of our services to Africa's research communities.

To learn more about the current situation of repositories in the African continent and across the area of African studies, we are distributing a short questionnaire as follows below.

We would welcome your responses to these questions, and any additional points you may raise. If you would be willing to respond to a longer questionnaire, please reply and we will send this to you.

We are contacting a number of repositories and will prepare a report of our findings around April/May time. We will be happy to share these with you.

Thanks in advance for your time and best wishes,

Stephanie Kitchen, Managing Editor, International African Institute, sk111@soas.ac.uk
 Anna de Mutiis, Executive Officer, Centre for African Studies, am131@soas.ac.uk

Short version

1. How many items does your repository hold?
2. Does your institution or repository have an Open Access policy or require the deposit of its members' publications or theses?
3. Does your repository offer an OAI-PMH interface as an international standard (a pre-requisite for it to be included in aggregators). Is the repository registered with ROAR <http://roar.eprints.org/>, OpenDOAR or harvested by Connecting Africa (<http://www.connecting-africa.net/index.htm>)?
4. What are the main difficulties you face?
5. How do you judge the support of academic staff and/or your institution for the repository?

Long version

- a. **Please provide a contact person(s)** who is responsibility for the management of your repository. Please give details of where this is located e.g. in the library, by IT services or in a separate office.
- b. **Size of the repository:** how many items does your repository hold?
- c. **Types of holdings:** please give details, e.g. doctoral theses; Master's level theses; other categories of items (e.g. draft or published journal articles, books).
- d. Does the repository include full text or merely a list of items held as physical copies in the library?
- e. **Range of disciplines held:** Does your repository include all disciplines covered by the university? Or at this stage, only certain disciplines? If so, which ones?