Collaboration in Digitising Cultural Heritage as a strategy to sustain access and sharing of cultural heritage information in Uganda

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Abstract

Uganda has little of its cultural heritage within its boundaries. This is partly because of lack of systematic preservation, conservation and restoration of the Uganda cultural heritage. Worse still many of the cultural artifacts were exported by colonial masters while others were destroyed by natural disasters including fire, war and malicious ignorant people. Consequently, collaborative efforts within the country and outside the country must be taken to re-possess or find means to make basic research on cultural heritage to reinvigorate it. This would need collaboration within Uganda and outside Uganda. Consequently, digitization of cultural heritage has taken popular turn in Uganda as elsewhere in the world as a means of conservation and preservation of cultural heritage for posterity. Through cooperation between World Digital Library (WDL) and the National Library of Uganda (NLU) remarkable digitization of Uganda Cultural heritage has taken place.

The aim of this research was to identify viable collaboration within and outside Uganda on digitisation of Uganda’s cultural heritage. The objectives that guided this research were to: establish the objectives of World Digital Library (WDL U) in Uganda, identify the custodians and producers of Uganda’s cultural heritage, identify cultural heritage materials collected, identify collaborative partners to ensure digitisation of Uganda’s cultural heritage, establish NLU collaborative efforts available in Uganda and outside Uganda to ensure access to and digitisation of cultural heritage, to identify benefits of digitizing Uganda’s cultural heritage, and to examine the challenges in collaboration towards preserving Uganda’s cultural heritage. Methodology included: literature review on Uganda cultural heritage, study tours to custodial institutions of Uganda’s cultural heritage, interviews with staff at NLU and with individual custodians of Uganda’s cultural heritage, collaborative work with the World Digital Library.

Beneficiaries will include both local and foreign, producers and consumers of Uganda cultural heritage, WDL and NLU partners/collaborators, students, researchers and posterity.

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1. Background

Map of Uganda

Uganda, politically the Republic of Uganda, is a landlocked country in East Africa. It is bordered to the East by Kenya, to the North by South Sudan, to the West by the Democratic Republic of the Congo, to the Southwest by Rwanda, and to the South by Tanzania. Uganda is the world's second most populous landlocked country after Ethiopia. The Southern part of the country includes a substantial portion of Lake Victoria, shared with Kenya and Tanzania, situating the country in the African Great Lakes region. Uganda also lies within the Nile basin, and has a varied but generally equatorial climate. Uganda takes its name from the Buganda kingdom, which encompasses a large portion of the South of the country including the capital Kampala. The people of Uganda were hunter-gatherers until 1,700 to 2,300 years ago, when Bantu-speaking populations migrated to the Southern parts of the country. The official language is English. Luganda, a central language, is widely spoken across the country, and multiple other languages are also spoken including Runyoro, Runyankole Rukiga, Langi and many others. (http://en.wikipedia.org/wiki/Uganda).

Apart from the multi-tribal composition of the Uganda population, the many religions and beliefs in Uganda, and different local governments, there is intensive multi-cultural mix in Uganda. The situation is made more complex and interesting because of the many nationalists from all over the world. These nationalists reside and work in Uganda making Uganda cultural mix a very intricate one. It is an appreciated view among civilized communities that the civilization of a nation is measured by the development of preservation and conservation of cultural heritage and advancement. Culture is the accumulated indigenous and adopted civilization of a nation.

Digitization of cultural heritage has taken popular turn in Uganda as elsewhere in the world as a means of conservation and preservation of cultural heritage for posterity. Through cooperation between World Digital Library (WDL) and the National Library of Uganda (NLU), remarkable digitization of Uganda Cultural heritage has taken place.
This paper is the result of research on the WDL and NLU collaborative digitization process in Uganda.

2. Key concepts defined

2.1 Digital Library

A digital library is an organized electronic information resource that offers text images as opposed to offering data about resources available in a collection. An all encompassing description can go further to describe it as a situation whereby a set of data, people and tools come together in a string of information creation, management, use, preservation, conservation and more creation (Breeding, 2002).

2.2 National Library

It is nick named the mother of libraries in a nation. It is a Centre of library and information services within the country that manages the legal deposit act, produces the national and retrospective bibliography, offers access to information resources, supports universal availability of publications, and in the absence of library schools/departments it takes the role educating and training of information professionals (Researcher, 2015).

2.3 Digitisation

Fox (1999) defines Digitisation as the conversion of the physical format of a material into an electronic format. It is a process of converting analog information into digital format. At the end of the process the digital image contains the same information or data as the analog item (Physical item). The goal of digitisation is to: increase access to the materials and preservation of these materials.

2.4 Cultural heritage

Cultural Heritage is an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. Cultural Heritage is often expressed as either Intangible or Tangible Cultural Heritage (ICOMOS, 2002). As part of human activity Cultural Heritage produces tangible representations of the value systems, beliefs, traditions and lifestyles. As an essential part of culture as a whole, Cultural Heritage, contains these visible and tangible traces form antiquity to the recent past. Cultural heritage is manifested in three major types below and as depicted in the diagram:

- Built in Environment (Buildings, Townscapes, Archaeological remains),
- Natural Environment (Rural landscapes, Coasts and shorelines, Agricultural heritage) and,
- Artifacts (Books & Documents, Objects, Pictures)
According to Feather (2006), the driving force behind all definitions of Cultural Heritage is: *it is a human creation intended to inform*

### 2.5 Heritage Cycle

The Heritage Cycle diagram gives us an idea how we can make the past part of our future (Simon Thurley, 2005). In a clockwise direction the wedges and arrows read:

- By understanding (cultural heritage)
  - people value it
- By valuing it
  - people want to care for it
- By caring for it
  - it will help people enjoy it
- From enjoying it
  - comes a thirst to understand
- By understanding it………..etc

**Thurley (2005).**

Source: [http://www.cultureindevelopment.nl/Cultural_Heritage/What_is_Cultural_Heritage](http://www.cultureindevelopment.nl/Cultural_Heritage/What_is_Cultural_Heritage)
2.6 Collaboration

In the context of this research, collaboration refers to joint effort of individual owners of cultural heritage, custodial institutions and collaborating institutions in the digitization of cultural heritage.

3. Background to the National Library of Uganda (NLU) and the World Digital Library (WDL) in Digitizing Cultural Heritage

NLU was established by the National Library Act, 2001. It replaced the Public Libraries Board, the body that used to control public libraries in Uganda. In essence the National Library of Uganda and all functions of the National Library were vested to it (www.nlu.go.ug).

NLU is participating in the World Digital Library (WDL) project. This is an Internet based information resource that is co-sponsored by the Library of Congress (LC) and the United Nations Educational, Scientific, and Cultural Organisation (UNESCO). In 2005, the Librarian of Congress, Dr. James Billington approached UNESCO with a proposal to create an online collection of unique materials that would enable people from all over the globe to access the documented heritage that exists in various cultural institutions around the world. The Library of Congress and UNESCO entered into an agreement to develop a prototype of the digital library and Google, the Internet company, provided a grant worth US $ 3m at the beginning of the project. The prototype was developed by the two partners (LC and UNESCO) in collaboration with five others namely the Bibliotheca Alexandrina of Alexandria, Egypt; the National Library of Brazil; the National Library of Egypt; the National Library of Russia; and the Russian State Library. The prototype was launched at the 2007 UNESCO General Conference (www.wdl.org).

WDL is intended to be used by everybody. Particular emphasis is put on young people especially, to promote international and intercultural understanding. The description of each item is meant to capture the interest and imagination of the user so that he/she develops an appetite to know more about the country and the institution where the items are located.

According to the world digital library website (www.wdl.org), the principal objectives of the WDL are to:

- Promote international and intercultural understanding;
- Expand the volume and variety of cultural content on the Internet;
- Provide resources for educators, scholars, and general audiences;
- Build capacity in partner institutions to narrow the digital divide within and between countries.

The WDL is unique in the following ways:

1. The content – The WDL content is very unique but also very small. The emphasis has been put on quality rather than quantity and many of the items are what is often referred to as the ‘jewels’ in a collection. The initial development of the WDL has focused on achieving a qualitative level of excellence in delivering digital content to users (search,
browse, multilingualism, descriptions and special features, and speed and performance) rather than on the quantity of items on the site.

2. The description – This includes about half a page of physical description, year of publication/creation, institution where it is located, subject area etc. of the item and a notation as to why it is important enough to be included in the collection. This information has been provided by librarians, curators of museums and other experts.

3. Multilingualism – There are currently seven languages used on the site, so the description of each and the navigation appears in Arabic, Chinese, English, French, Portuguese, Russian, and Spanish. A translation memory is used, which prevents translators from having to translate the same word or phrase twice.

4. Research Problem
Uganda’s cultural heritage has been told from generation to generation by word of mouth. This has two disadvantages: First, the cultural description disappears when those who knew it die; the second drawback is that, as the cultural heritage is passed on to others by those who know it, the chances are, it would either be exaggerated or distorted or even not be any more in the original form. Part of the cultural heritage was recorded in writing but, there were a few of such authors who could do the job exhaustively. Therefore, much of the cultural heritage was missed out. Even with the existing little cultural heritage individually owned, the owners have the right to decide how to use it or not to use it. The whereabouts of the little existing cultural heritage is known and in some cases, scattered all over Uganda. Some cultural institutions like the Kasubi Tombs have been destroyed by natural disasters (fire); some were rooted during the tribal conflicts and civil wars. Many of the cultural heritages were taken out of Uganda by the colonial masters. Therefore, the overall situation is that, Uganda has little of its cultural heritage within its boundaries. Consequently, collaborative efforts within the country and outside the country must be taken to re-possess or find means to make basic research on cultural heritage. This would need collaboration within Uganda and outside Uganda.

5. Aim of this research
The aim of this research was to identify viable collaboration within and outside Uganda on how to preserve and conserve Uganda’s cultural heritage.

6. Research Objectives
The following objectives guided this research:

i) To establish the objectives of World Digital Library (WDL U) in Uganda

ii) To identify the custodians and producers of Uganda’s cultural heritage

iii) To identify cultural heritage materials collected

iv) To identify collaborative partners to ensure preservation and conservation of Uganda’s cultural heritage
v) To establish NLU collaborative efforts available in Uganda and outside Uganda to ensure access to and digitisation of cultural heritage

vi) To identify benefits of digitizing Uganda’s cultural heritage

vii) To examine the challenges in collaboration towards preserving Uganda’s cultural heritage

7. Methodology

i) Literature review of Uganda cultural heritage

ii) Study tours to custodial institutions of Uganda’s cultural heritage

iii) Interviews with individual custodians of Uganda’s cultural heritage

iv) Collaborative work with the World Digital Library

In collecting, preserving and analysis of data the following instruments were used. Camera used to take photographs, mobile phone used to contact the research participants, the tape recorder was used to record cultural data related interviews. The cultural leaders, cultural authors, artists, respective kingdoms and WDL staff based in Washington were some of the collaborators in this research.

8. Findings

The findings are presented according to the objectives of this research.

8.1 Objectives of World Digital Library (WDL U) in Uganda

The general objective of WDL in Uganda is to trace and digitize the Uganda’s political, economic, social and technological history. This has been guided by the theme “Unity in diversity - the coming together as a nation through documentation, preservation and dissemination of Uganda cultural heritage home and abroad”,

According to the one onto one interview with the Director, NLU, WDL (Uganda) specific objectives include:

i. Promoting Uganda’s heritage worldwide

ii. Bringing Uganda national heritage in one place/space for use by both intellectuals and the general Ugandan public

iii. Conserving and preserving Uganda’s heritage – presently, documentation of Uganda’s history and cultures is in a very bad state.

iv. Contributing to regional cooperation

8.2 Custodians of Uganda’s cultural heritage

During the field visits, the researcher discovered that the custodians of Uganda’s cultural heritage include:
a) Institutions such as

(i) Kyambogo University
(ii) Uganda Museum
(iii) Uganda Society
(iv) Uganda Law Reform Commission
(v) Bank of Uganda
(vi) Uganda Management Institute
(vii) Uganda Communications Commission
(viii) Parliament of Uganda
(ix) National Fisheries Resources Research Institute
(x) Toro kingdom
(xi) Uganda National Archives
(xii) Uganda Christian University
(xiii) Ndejje University
(xiv) Kings’ College Budo S.S.S
(xv) Uganda Law Development Centre

b) Individuals like

(i) Mr. Charles K. Muhanga
(ii) Ms. Gladys Winyi
(iii) Mr. Drake Ssekeba
(iv) Mrs. Eriosi Joy Batambuze
(v) Prof. Samwiri Lwanga- Lunyiigo

8.3 Cultural heritage materials collected

During the interviews with NLU staff, materials collected from the field include: books on the early missionary travels not in the public domain; Agreements signed by the British with the various tribal rulers for example, Muteesa I, the King of Buganda, who wrote the letter to Queen Victoria of England inviting the missionaries to spread Christianity. Other agreements include: the Buganda Agreement, 1900, the Bunyoro Agreement, the Toro Agreement, among others; the maps of Uganda then; the first translations of the Bible into various languages including the ‘Biscuit Tin Bible’ currently archived at the National Museum; the first catechisms in the various Ugandan languages; pictures (drawings and photos) of the 1870s – 1920s; first issues of newspapers – in various languages; manuscripts/documents related to historical figures like Semei Kakungulu; first stamps for Uganda as a Protectorate; first Ugandan money; pictures that show the tribal rulers in the late 19th and early 20th centuries; traditional dress and Royal regalia of various tribes; pictures from the independence day celebrations, maps by explorers; early printed maps; maps by indigenous peoples or that show geographic knowledge obtained from indigenous peoples; topical maps showing industry, transportation, ethnographic and linguistic distribution e.g Maps from the pre-colonial era onwards, old maps of the original districts of Uganda, Maps of Islands such as those around L. Victoria like Mgingo and Ugingo islands which are a hot debate between the Kenya and Uganda Government, among others.
8.4 NLU collaborative efforts available in Uganda to ensure access to cultural heritage

8.4.1 Meetings with individuals and contributor institutions

During the focus group interviews with the NLU Staff, it was noted that, staff visited possible contributor institutions and individuals of digitisable materials, and enabled sensitization about and publicity of the digitization project. These visits were useful because they clarified the objectives of the project.

WDL (Uganda) Staff selected items that best present Uganda cultures. Later, meetings were held with the contributors to formalize the identification process with the signing of an agreement to have their materials digitized.

8.4.2 Identification of digitisable cultural materials

Contributor institutions and individuals are identified and sensitised about the aims and objectives of the WDL and the aims and objectives of WDL Uganda. After agreeing to become partners or contributor institutions, an agreement is signed with the Library of Congress (LC) because they control the WDL Website. This agreement gives a go-ahead to identify and select cultural heritage digitisable materials.

After discussions with partner institutions in the country and meetings with other stakeholders, the NLU further held consultative meetings with the Task Force Committee. This committee advised on the actual items/content to feature on the WDL Website.

The committee decided that materials to feature on the World Digital Library Website should include items related to religion, politics and culture - the three top concerns in Uganda’s history.

A minimum of one month was given to return the identified materials to the contributor individual/institution.

A total of 800 materials were identified. They include: books from the early missionary travels that are in the public domain; Agreements signed by the British with the various tribal rulers for example, Muteesa I, the King of Buganda, who wrote the letter to Queen Victoria of England inviting the missionaries to spread Christianity. Other agreements include: the Buganda Agreement, 1900, the Bunyoro Agreement, the Toro Agreement, among others; the maps of Uganda then; the First Translations of the Bible into various languages including the ‘Biscuit Tin Bible’ currently archived at the National Museum; the first catechisms in the various Ugandan languages; pictures (drawings and photos) of the 1870s – 1920s; first issues of newspapers – in various languages; manuscripts/documents related to historical figures like Semei Kakungulu; first stamps for Uganda as a Protectorate; first Ugandan money; pictures that show the tribal rulers in the Late 19th and Early 20th centuries; traditional dress and Royal Regalia of various tribes; pictures from the Independence Day celebrations, maps by the explorers; early printed maps; maps by indigenous peoples or those that show geographic knowledge obtained from indigenous peoples; topical maps showing industry, transportation, ethnographic and linguistic distribution such as maps from the pre-colonial era onwards, old maps of the original districts of Uganda, Maps of Islands such as those around L. Victoria like Mgingo and Ugingo islands which were a hot debate between the Kenya and Uganda Government, among others.
8.4.3 Preservation and Conservation of Digitisable Materials

The American Institute for Conservation of Historic and Artistic Works (AIC)(2010), defines three relevant terms:

- **Preservation**—the protection of cultural property through activities that minimize chemical and physical deterioration and damage, and, that prevent loss of information content.
- **Conservation**—Conservation activities include examination, documentation, treatment, and preventive care, supported by research and education.
- **Restoration**—Treatment procedures intended to return cultural property to a known or assumed state, often through the addition of non-original material.

According to the Northeast Document Conservation Center (2006), it is not possible to preserve every brittle item. Consequently various strategies have been developed.

- **Vulnerability to Loss or Deterioration**—Materials that are particularly subject to deterioration, such as newspapers or items to be exhibited, are identified for attention.
- **Value or Uniqueness**—Items that are particularly unique or valuable (in monetary or other senses) are identified for attention.
- **Condition and Use**—Deteriorated items in need of attention are identified as they are returned after circulation or pointed out to staff by users or stack maintenance staff.

According to the preservation and conservation specialist, when digitisable materials are brought to NLU, the Conservator

- Pre-assesses them before they are scanned. During the pre-assessment, the nature of the material are established, the likely dangers that might occur on the materials during scanning and cleaning the materials by removing the unwanted materials  for example, cello tape, staple wires, food, dust, among others.
- Strengthens the items - this is small repair done to the material before scanning. It aims at strengthening the material holding to ease the scanning work and to avoid more damage. The Conservator treats the items after the scanning process - fixing new covers, strengthening spines, cleaning spines, providing new housing such as boxing, encapsulating and binding the items. For photographs, frames are provided.

Commenting on the preservation and conservation process, the NLU Conservator said:

> I do general treatment on the dirty documents, insect infected materials and on materials that have been affected by the atmosphere around them. We manually dehumidify documents because we lack special machines that would perform this task (NLU Conservator, 2015).

Asked about the preservation process, the conservator remarked

> Not much preservation takes place at NLU because many people are not aware. Many items received are dog eared, infected, contaminated with foods and liquid and, are dusty, among others (NLU Conservator, 2015).
8.4.4 Scanning /Digitizing of Cultural Heritage Materials

When identified and selected digitisable materials are brought to the NLU to the Preserver/Conservator to assess their physical state before they go to the scanners. He examines whether the items were affected by insects so as to treat them; whether the paper is very brittle to be scanned; whether scanning could be done without any binding, etc. Further instructions are made to the scanners to follow when scanning.

A total of 800 items have been scanned. The basic hardware used in scanning include: computers to store and display the images as they are scanned. When using Suprascan II (the scanning machine), the computer controls the motor, the camera, and the entire sequence of scanning and processing of images. Images may be saved to the Hard Disk of the computer connected to the Scanner or to another computer via the Network Adaptor. Scanners/digital cameras- I2S Suprascan II are used. Further, Digibook, xnview and Adobe Photoshop software are used at NLU.

After scanning the materials, the scanner operators create digital images such as photographs and are saved in both JPEG (Joint Photographic Experts Group Format) and TIFF (Tagged Image File Format). The rest of the images are in TIFF. TIFF is preferred because of high quality images, and compatibility with most graphics, desktop publishing, and word processing applications, TIFF files are large and few web browsers can display them. Files may or may not be compressed.

After scanning, materials are post processed for image enhancement by improving brightness, contrast, removal of dirt from the edges of digitized images, and checking the accuracy of the digitized images. This process called for collaboration among owners of materials, NLU staff, WDL sponsors and related institutions.

8.4.5 Metadata

A total of 800 Items have been described using Ms Access, MODS (Metadata Object Description Schema) - a descriptive metadata standard, Oxygen XML Editor 11.0, Oxygen and Exist XML database (exist XML database). Under this process, staff at NLU, received training by WDL staff from Washington.

8.4.6 Creation of the Uganda Digital Repository

According to the IT specialist at NLU, NLU has created a Digital Repository of the WDL (U) where output from all custodial owners and institutions will be accessible freely to end-users both within and outside NLU. The Digital Repository was possible after receiving support from WDL staff and WDL member institutions such National Library of Egypt, National Library of South Africa.
8.5 Benefits of Collaboration in Digitising Cultural Heritage

According to the staff at the NLU, the partnering institutions in Uganda would benefit in various way including:

Publicizing what they have on the WDL website, conservation realization of the cultural heritage, conservation work on their documents and a forum is being created for cultural institutions to work together to preserve the country’s cultural heritage.

8.6 Challenges in collaboration towards preserving Uganda’s cultural heritage

According to the interviews with custodial owners and institutions of the cultural heritage below were the challenges:

i) Poor environment for documents – The tropical nature of Uganda’s climate is very hostile to paper documents. They are easily damaged by humidity, mould, insects, water and dust.

![Cultural heritage materials in a sorry state](image1)

![Cultural heritage materials damaged by water, mould and insects](image2)

ii) Scattered documents – Several institutions have important documents but most do not have a continuous series of any of the publications.

iii) Lack of awareness – Many people, especially those who have private collections are unaware of the ‘treasures’ they have

iv) Intangible heritage

v) Competing national priorities

vi) Lack of Internet access by most ordinary Ugandans
vii) Lack of awareness – Many people, especially those who have private collections are unaware of the ‘treasures’ they have

viii) Lack of Internet access by most ordinary Ugandans

ix) Technical Support - WDL (U) has two computers for both scanning and post processing activities. The Post Processing Scanner broke down which slowed the progress of the post processing activities. Further, Uganda experiences power rationing (load shedding) which affects the scanning activities.

x) Some digitisable materials are in hard-bound format which makes them difficult to digitize. Many materials are too brittle to be digitized. Furthermore, institutions insist that their digitisable materials should be scanned at their premises for security reasons.

xi) Scattered collections – many institutions holding unique items are scattered all over the country. It is not easy to know who has which materials because there is no tracing guide. The only alternative is to enquire from different historians and administrators, who many times are un-cooperative or are not sure.

xii) The absence of exemplary regional centers that continuously offer training to young professionals (especially conservators) is another hindrance to having skilled staff within most institutions and archives.

Conclusions

Visits to the cultural heritage institutions and to individual homes revealed that there is a lot of cultural heritage undocumented. NLU established collaborative MoU between the World Digital Library of the Library of Congress in the US which later also signed MoUs with custodial institutions and individual cultural heritage owners in Uganda which led the unconditional release of the cultural heritage information. Uganda has joined the community of nations in making any items that it deems to be unique and of great historical value accessible to the rest of the world. With a very rich cultural heritage, Uganda has a lot to offer to the world. In addition, there are many unique documents and other items scattered in various public and private collections in the country that would be of great use both to the Ugandan public. This would bring it all together in one place. It is sincerely hoped that as a nation Uganda can work together and bring forward the different expertise in library, archival and museum work, in ICT, in law and in the many other fields represented in the cultural heritage information materials, to get all the various ‘treasures’ available in institutions and in the hands of individuals in one place and available to Ugandan public and to the rest of the world.

The prayer is that adequate funding to make comprehensive cultural heritage will be available through collaborative efforts to continue the work already started.
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