

Copyright and Access to e-Resources in Africa's Education and Research Contexts: the case of selected Ugandan Institutions

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Abstract

The study examined the impact of copyright in Africa's research and education contexts drawing from three Ugandan institutions. The study also examined the impact of copyright on representation of African knowledge in the electronic environment. Institutions are actively involved in research and content generation with slight variations between institutions. Copyright was generally dismissed because it fails to address African Situation, a metaphor for sociocultural and economic realities. Infrastructure inadequacies and bias, not copyright were to blame for lack of African content in the digital environment. Institutions lacked policies on copyright, policy vacuum potentially good for introducing open access and content options to the narrowly focuses options in traditional copyright approaches. Initial attempt at policy by a participating institution points to a utilitarian approach to copyright, a policy direction likely to hinder than promote access to knowledge and stifle innovation in the long run. That notwithstanding, institutional policies were highly recommended to attend to the problem areas that emerged from the data and other institutional challenges likely to surface as copyright intensifies its assaults access for education and research.

Table of Content

Abstract.....	1
Table of Contents.....	2
1.0. Introduction.....	3
2.0. Research questions and study objectives.....	5
3.0. Review of Literature.....	5
3.1. Copyright problem or the problem of copyright.....	6
3.2. Copyrights, education and civil society.....	7
3.3. Access and representation of Africa knowledge.....	11
3.4. The Ugandan context.....	14
3.4.1. <i>E-resources</i>	15
3.4.2. <i>Copyright laws and policies in Uganda</i>	16
4.0. The Study.....	17
4.1. Study sites.....	17
4.1.1 <i>Makerere University Kampala (Mak)</i>	18
4.1.2 <i>Uganda Martyrs' University, (UMU) Nkozi</i>	18
4.1.3 <i>Fisheries Resources Research Institute (FIRRI)</i>	18
4.2. Methodology.....	19
4.3. Data handling and analysis.....	20
4.4. Study Findings.....	20
4.4.1 <i>Research and knowledge creation</i>	21
4.4.2 <i>Copyright awareness and relevance...the 'African Situation'</i>	22
4.4.3 <i>E-resource use, copyright ... and the Google factor</i>	25
4.4.4 <i>African content representation</i>	27
4.5. Case study of Makerere's draft Research an IPR Management Policy.....	30
4.5.1 <i>Background to Makerere's draft policy</i>	30
4.5.2 <i>Internal research, creativity and innovation as drivers</i>	31
4.5.3 <i>Key copyright (IPR) provisions</i>	31
4.5.4 <i>Identifiable 'grey' area and implications of Makerere's draft policy</i>	32
5.0. Conclusions and recommendations.....	33
Bibliography.....	35

1.0. Introduction

The study conducted at three Ugandan institutions examined the impact of copyright on access to electronic resources and representation of African content in the digital environment. Increasingly copyright is a key policy issue for Africa's research and education institutions. Copyright provides the legal framework for private claims to a range of rights in intellectual property. Copyright achieves this by granting exclusive rights to creators of literary and artistic products. Copyright establishes public interests in literary and artistic creations including use of knowledge products for scholarship and research without recourse to the rights-holder. The most pervasive public interest provisions in copyright are the fair use/ fair dealing clauses. Copyright, therefore, regulates knowledge production, distribution, access and use. In the education realms, copyright is framed around access to information, intellectual freedom or the freedom to pursue knowledge for self-determination. Depending on the flexibilities in the copyright law of a given jurisdiction, copyright promotes or hinders education and research activities. Nascent concerns and debate around copyright amongst Africa's policymakers, development partners, civil society and scholars center on its impact on access and use of information for education and research. For most part, that debate happens in a vacuum due to lack of empirical research on copyright in education in general, access to educational content in particular. The need to understand the impact of copyright in Africa's education and research environments cannot be more urgent.

Against the backdrop of copyright assault on education, this study examines the impact of copyright on access to information in Africa's educational and research institutions. Access is approached in the narrower lens of electronic resources but recognize that non-electronic resources remain important sources for faculty and students in many institutions. Likewise technological infrastructure remains an enduring challenge to many African institutions. This study concentrates on e-resources to acknowledge the tremendous growth in use of these resources in African universities and research institutions. Electronic resources available through academic databases supplement the small and, oftentimes, dated library collections characteristic of African education and research institutions. E-resources present long-term opportunities for democratizing access to educational content in Africa's higher learning environments. Besides, e-resources are central to the open and distance learning (ODL) models touted as remedies to Africa's long-term human capacity building needs (Pityana 2004).¹

However, for electronic resources are to meet Africa's research and education needs, Africa's scholarly output should be visible in academic databases to account for Africa's unique socio-cultural experiences and development needs. Besides access to electronic resources in general, this study examines the impact of copyright on representation and accessibility of African content in the digital environment. Some scholars frame inadequate representation of African content in the digital environments as a copyright and technological question (Kawooya 2006; Okediji 2004). Thus far, a feature article in the 2005 summer issue of *The Carnegie Reporter*² observed that some African scholars, scientists and researchers expressed uncertainty towards digital technology for publishing African scholarship. This school of thought cites intellectual misappropriation of 'unique African knowledge' in the digital environment as an obstacle to the visibility and sharing of African content.

¹Pityana considers ODL a unique opportunity for Africans to catch up after years of conflicts especially for those who missed opportunities of traditional education systems. Because ODL learners are mature-self directed individuals, the need for easy access to a variety resources to support their learning experiences.

² Carnegie Reporter is a publication of the Carnegie Corporation of New York:
<http://www.carnegie.org/reporter/>

Similar sentiments were expressed at a workshop organized by Association of African Universities (AAU). Kiondo (2004) pointed out that: “fluidity and uncertainty of copyright and intellectual property rights for African intellectual contributions as a hindrance to wide accessibility of African scholarship (2).” From this school of thought, lack of effective intellectual protection of African content in digital environments is the stumbling block to availability that content in the digital environs. The alternative school blames the lack of African content on marginalization of that content by western databases publishers (Jaygbay 2006). This school submits that bias rather than copyright, per say, is the main reason African content is widely unavailable and visible in western electronic databases.

Research and education institutions are well situated as venues for examining and analyzing copyright as an intervening factor in access to e-resources and visibility of African content. These institutions are actively involved in knowledge creation that is predicated on utilization of local and foreign knowledge. Increasingly the knowledge created ends up in digital realms. At the same time, knowledge utilized in creation of new knowledge exists delivered in digital form. To the extent that copyright affects access and use of e-resources, this study, focuses on the access and use ends of institutional knowledge cycle. The knowledge cycle refers to the process of accessing existing knowledge to create new knowledge, itself an object of even further knowledge creation. The study attempts to critically analyze public interest in the copyright system vis-à-vis access and use of knowledge in Africa's research and education institutions.

Access is approached through the narrower lens of access and use of e-resources in selected Ugandan university and research institutions. The study frames electronic databases as the delivery infrastructure and copyright as the 'mediating' factor that either promotes, or hinders, access and use of knowledge. Access in the study is limited to content and not extended to infrastructure issues. Second, as applied to copyright, access is confined to the legal and policy mechanisms facilitating easier access and use of knowledge. Specific attention is given to the public interests in the copyright system and the value of openness at the center of open access movements today. The researcher views open access/content as critical to Africa's education, creativity and long-term development goals.

No research exercise is free of the researcher's conscious, or unconscious, values and interests. From the choice of a study topic to research questions and how they are posed, researchers are actively involved in making decisions that bias the study one way or the other. This study is no exception. But rather than making objectivity claims, therefore, I choose to state the motivation for conducting the study. The study is grounded in the intellectual tradition advocating for bringing back the public good in the contemporary copyright discourse. Over the years public interests in the copyright system gave way to private and corporate entities whose primary interests is capital accumulation out of knowledge products. Private interests curtail openness in knowledge production and distribution using copyright and related intellectual property rights to redefine access parameters. Despite advocating for openness, I attempt to represent participants' views as accurately as possible through use of quotations in the presentation and discussion of findings. I achieved my intended goal of addressing public interests in the copyright system by subjecting and interpreting findings through the open access analytical framework and values. The open access analytical framework is best described in terms of the Access Principle set forth by Willinsky (2006). Willinsky (2006) argues that knowledge created is only useful to society as a whole if it is widely shared with no or minimal barriers.

The study report is structured into five main sections. First is the introduction followed by the study questions and objectives followed by a brief review of relevant literature. The study methodology and data analysis follow the literature review followed by presentation of findings and lastly, conclusions

and policy recommendations.

2.0. Research questions and study objectives

To understand the confluence of copyright, access to e-resources and visibility of African content, three central research questions are posed and examined in this study. The study questions are:

- i) How does copyright mediate to hinder, or promote, access to electronic resources in Uganda's education and research settings?
- ii) How does copyright distort representation of Africa's scholarship in the global knowledge flows through electronic database, and
- iii) How can Africa's education and research institutions leverage experiences from internal copyright-related activities, or lack thereof, to formulate institutional policies but also influence national and international copyright policy spaces?

Although designed to understand the prevailing circumstances, the study objectives should be looked at from the researcher's stated goal of finding policy spaces for advancing openness in Africa's education and research institutions. Objectives of the study are:

- i) Understanding how copyright factors into access and use of electronic resources by academics, students and researchers, on and off campus, using both proprietary and non-proprietary electronic resources,
- ii) Exploring, from the perspective of academic, students and researchers, representation of African scholarship based on e-resources they use, and
- iii) Determining how internal practices and empirical findings can be utilized by university and research institutions to develop not only own institutional policies on copyright but also influence national and international policy dialogs and spaces.

The brief review of literature that follows is not necessarily intended to identify research gaps. Instead it is aimed at situating the study in the access to knowledge framework. The literature serves to inform and guide this and future African studies based on global best practices and scholarly works reviewed here. In the globalized framework, African stands to benefit from initiatives and scholarly endeavors representing experiences elsewhere.

3.0. Review of Literature

The literature review is a snapshot rather than exhaustive treatment of scholarly and civil society work on copyright in education and research. It's worth noting that a significant portion of the literature is not situated in the Africa context mainly because African scholarship on the topic is scanty to non-existent. However, the 'outside' scholarship and experiences are drawn upon to the extent that they reflect similar situations. A plausible assumption made here is that such experiences enable us articulate Africa's copyright challenges.

The first section considers basic arguments about copyright that are structured as two schools of thought, private and public interest schools. Next the discussion narrows to copyright and education followed by institutional practice on copyright and access in the African contexts. The section that follows considers representation and visibility of African content. Uganda, the study site, is introduced in the last section presenting key statistics and facts on the country's education sector and copyright scene.

3.1. Copyright problem or the problem of copyright

Access to knowledge goods and services is increasingly controlled by private entities leading to unintended consequences for education and research (DeLong & Froomkin 2000). Proponents of this 'private interest' utilitarian approach perceive copyright as essential to innovation and creativity without which creators of knowledge goods have no incentive to produce new knowledge. Rights owners in knowledge products rely on the copyright system to derive economic benefits by controlling production, distribution, access and use of knowledge goods and services. Proponents also argue that ideas or information, the precursors to knowledge goods, are *nonrivalrous* and *nonexcludable* in nature (Maskus 2000). *Nonrivalrous* means that use by one person doesn't diminish use by another and *nonexcludable* refers to the fact that once information is 'out there,' one cannot prevent others from utilizing it (Maskus 2000). The knowledge for knowledge good suffers from imperfection warranting a mix of legal and economic mechanisms for that market to function efficiently, or near efficiency (Bates, 1988; Bettig, 1996).

On the flip side, some scholars find the above assertions conceptually and historically flawed on grounds that public and private rights in the copyright system were meant to be on equal footing (UK Commission 2002; Nwauche 2005; Lessig, 2004). The balance between private and public interests is critical to accessing private goods protected by copyright. Neither rights holder nor the public have absolute control over knowledge under this school. Besides, the assumption that individuals engage in knowledge creation solely for economic gains doesn't hold for all situation since many do so for honor. Privileging private interests over public rights permissible in the traditional copyright system undermines education and research institutions (Bettig 1996). Public institutions suffer when exclusive rights granted to rights-holders through the copyright system become control mechanisms for defining who gains access to knowledge goods and services. The trend towards privileging private interests over the years led to erosion of public interests in the contemporary copyright discourse and scholarly endeavors. Consequently, the public domain is shrinking as a result of corporate assault on public interests in the copyright system (Bettig, 1996; Vaidhyanathan, 2001). Rights holders in literary artifacts like books determine who accesses what and under what terms, notwithstanding special provisions for public services. Cast from that angle, copyright seriously impacts access to knowledge in public interest sectors including education, research and training whose economic contributions are neither short-term nor self-evident (Maskus 2000).

However, copyright control mechanisms are not restricted to access but also to how and which knowledge is represented in the global knowledge flows. For instance, Copyright is predicated on the written or tangible forms thereby discriminating against and distorting representation of knowledge from predominantly oral traditions (Madian 2005). Indigenous and traditional knowledge (ITK) is often constructed as public domain materials (Armstrong and Heather 2005). The contemporary copyright system cannot effectively deal with this knowledge. It fails to address the collectivist ownership approach to ITK as opposed to the individualistic approach in the western copyright tradition (Britz and

Lipinski 2004. It also is based on originality claims yet ITK is a result of continuous engagement with communal cultural resources by members and non-members. Lastly requirement for material forms by the copyright system alienates ITK which is typically irreducible to material form. As a result of placing ITK in the public domain exposes unique African ITK resources to misappropriation to the disadvantage of originating communities. Misappropriation is not just economic gains but also inappropriate use and application of sacred resources and artifacts with special means and values to communities in question. As noted earlier, some African scholars, presumably drawing from collective ITK, are reluctant to make available their work in the digital environment fearing its misappropriation. The extent to which Africa's copyright intervenes to influence visibility and utilization of Africa content is of interest to this study and elaborated upon later.

3.2. Copyrights, education and civil society

International instruments particularly the Berne Convention (1886)³ specifically the Appendix (1971) to Berne; the Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (1995)⁴ and the WIPO Copyright Treaty – WCT (1996) carry provisions to advance knowledge and learning. Countries have implemented some of these provisions either as fair use/dealing provisions or general exceptions and limitations for education and research. The comprehensive but cumbersome Berne Appendix specifically developed for developing countries remains largely unused. A recent study by Consumer International (Asia-Pacific) examined flexibilities in national copyright laws of eleven Asian-Pacific countries and concluded that there is under utilization of internationally acceptable copyright flexibilities in several South East Asian countries (Consumer International 2006). Taking a critical-legal analysis, the Asian study clarified on the range of flexibilities available in international instruments including: scope of copyright protection, duration of copyright protection and limitations and exceptions (Consumer International 2006). Education and research institutions stand to benefit if national laws take advantage of these and more flexibilities. Similar studies on flexibilities in the African context, or implementation of flexibilities in existing national copyright laws is a logical step but beyond the scope of this study.

A study in the Southern African Customs Union (SACU) taking a comparative-legal analysis of copyright laws of selected countries in the region established copyright and trade-related issues hampering access to knowledge (Rens, Prabhal & Kawooya 2006). The study took stock of available limitations and exceptions in national laws of the countries in the region (*see Table 1 next page*). Overall, the SACU study concluded that national copyright laws generally carried provisions for education and research. However beyond copyright, the study took note of the complex nature of contractual and licensing structures in the realm of trade law which directly affects access to learning and research materials.

³ Text (as revised) available from (not official site): <http://www.law.cornell.edu/treaties/berne/overview.html>

⁴ See full text at: http://www.wto.org/english/docs_e/legal_e/27-trips.pdf

Table 1: Current Copyright legislative provisions which impact on access to learning materials (Reference is to primary legislation unless stated otherwise)

COUNTRY	Exceptions	Limitations	Import	Other Relevant Provisions
Botswana ⁶⁶	s12 Exceptions s13 Private Reproduction s14 Quotation s16 Teaching s16 Libraries	s28 Non application of s24, 25, 26, 27 to certain uses	s32 Powers of Customs Officials	
Lesotho ⁶⁷	s9 Free Use	s10 Limitation of right of Translation (Schedule 1) 11. Limitation of the Right of Reproduction (Schedule 2) s30 Limitation of Protection of Neighbouring Rights	s 30 Ministers General Regulation Power	s18 Use of works in public domain requiring authorisation s19-22 Utilization of folklore requiring authorisation
Namibia ⁶⁸	s15 Fair Dealing s16 Prescribed Exemptions		s29 (2) unauthorised import s34 prohibition of import	s81 General Regulation powers
South Africa ⁶⁹	s12 General Exceptions music and literary works s13 Prescribed Exceptions s15-19B application of general exceptions to other types of works 23 (2) (a) import for personal use allowed			
Swaziland ⁷⁰	s 4(1) (a) (d) (f) of the 1912 Act? s6 Compulsory licence			s26 bis Deposit of 1912 Act

⁶⁶ Unless otherwise stated, sections referred to in this row are in the Botswana Copyright and Neighbouring Rights Act No. 8 of 2000.

⁶⁷ Unless otherwise stated, sections referred to in this row are in Lesotho Copyright Order No. 13 of 1989.

⁶⁸ Unless otherwise stated, sections referred to in this row are the Namibia Copyright and Neighbouring Rights Protection Act 6 Of 1994.

⁶⁹ Unless otherwise stated, sections referred to in this row are in the South African Copyright Act 98 of 1978.

Source: Rens, Prabhala & Kawooya (2006), pg. 47.

Subjecting access to education and research content to trade law is most troubling. Trade and economic analysis is not necessarily amenable to information as a public goods especially in poor countries. Economic contributions of public institutions are long-term and often don't fit traditional economic models (Bates 1988). This has provided grounds for most economists to dismiss public interests in copyright systems. However, economists like Keith Maskus cross disciplinary and ideological boundaries to show that copyright systems based on traditional economic models fail to account for socioeconomic contributions of public interest institutions to national development. This problem of 'economics of copyright' is compounded in very poor countries by what Maskus (2000) calls *information imperfection*. Information imperfection is a situation where countries lack institutional infrastructure to guarantee access to market information, in this case copyright information. Public interest institutions already burdened by the copyright system, are further strained in the market place due to *information imperfection*. Through license and contract extortions, for instance, institutions end up paying heavily for e-resources due to insufficient market information. In the infrastructure terms, the

extortion manifests in forms of exorbitant bandwidth fees.⁵

Deficiencies of economic approaches to copyright put aside, human beings historically privileged knowledge sharing by not constructing access barriers (Willinsky 2006). Based on historical evidence and contemporary realities, Willinsky (2006) proposed the Access Principle that urges knowledge creators share that knowledge for it to be of consequence to society. The Access Principle is relevant to rich and poor societies alike but probably critical in poor countries of Africa where knowledge sharing should translate to development solutions. As stated earlier, the principle is the analytical framework in which the study is grounded.

Civil society involvement in the copyright debate through the open access/content movements raised awareness around copyright and education.⁶ A few civil society interventions and intergovernmental efforts relevant to the African situation are highlighted here. Civil society organizations earmarked copyright and access to knowledge as critical areas for empirical work and legal reforms. The Yale Access to Knowledge Conference focused on cultivating and formulating analytical frameworks, and setting the scope and parameters on access to knowledge.⁷ Organizers of the Conference recognized that empirical research on copyright and access to knowledge remains at preliminary stages of developing appropriate analytical frameworks, disciplinary boundaries and formulating appropriate questions.

Attempts at fostering a flexible copyright system for education and research, or even developing alternative approaches to knowledge protection, form the core agenda of numerous open access movements. The open access movements draw from the open and free source software movement to forge legal and practical options for content access and use. The First Openness Conference at the University of Chicago brought together scholars in areas of free/open source, open science, open journal and open collaboration to share experiences on what business models work, under what circumstances and to what ends.⁸ Although the quest for sustainable business models remains open, 'inter-movement' interactions and exchanges like facilitated by the First Openness Conference serve to deepen the values of openness and strengthening individual movements. In addition, closer proximity of the open access movement to scholarly environs gives the notion of openness greater visibility in traditional academic disciplines and scholarly examination of the nature, purpose and potential of these movements.

Besides academic initiatives, civil society is actively involved in the open access work as well. Some of the most influential statements and landmark documents including the Budapest Open Access Initiative and the Access to Knowledge Statement treaty⁹ resulted from intense consultations and negotiations amongst civil society, academics, advocates, industry actors and policy makers. These groups have shared values in liberal approaches to copyright or development of alternative systems for rewarding creativity and innovation. Most declarations have had significant impact by raising awareness on the relationship between copyright and access to educational content. Reports issued by civil society organizations and reputable research centers (Yale Information Society Institute) tackle

⁵<http://www.carnegie.org/reporter/> : See feature article on ICT and Copyright in African universities (summer 2005).

⁶The Access to Knowledge Treaty is a result of a consultative process of civil society actors. Text of the draft Treaty and resources available at: <http://www.cptech.org/a2k/>

⁷ Conference information at: <http://research.yale.edu/isp/eventsa2k.html> and proceedings at: http://research.yale.edu/isp/a2k/wiki/index.php/Yale_A2K_Conference

⁸ First Monday *First Openness* Conference information at: <http://numenor.lib.uic.edu/fmconference/>

⁹ More information at: <http://www.soros.org/openaccess/>

education-related questions. The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities from the prestigious Max-Planck Society is an excellent example. The Berkman Center at Harvard Law School also issued a white paper on challenges to educational uses of copyrighted materials in the digital age.¹⁰ The report attributes obstacles to education in the digital environment to:

- a) Unclear or inadequate copyright law relating to crucial provisions such as fair use and educational use;
- b) Extensive adoption of digital rights management technology to lock up content;
- c) Practical difficulties obtaining rights to use content when licenses are necessary;
- d) Undue caution by gatekeepers such as publishers or educational administrators. (Fisher & McGeeveran 2006, 2).

Whereas the Berkman study was US based and, therefore, representing a significantly different context from Africa, some obstacles resonated with this study reported later in the findings.

Intergovernmental organizations such as United Nations Educational, Scientific and Cultural Organization (UNESCO)¹¹ and World Health Organization (WHO)¹² have weighed in on the knowledge commons debate to influence legal and policy reforms at global, regional and national levels. The significance of their involvement may not be apparent immediately for the primary forum for discussing copyright is the World Intellectual Property Organization (WIPO). But contributions of UNESCO, WHO and international organizations changes long-terms directions of the debate and rules of engagement.

The quest for open content to knowledge has prompted seemingly 'unholy relationships' like the Open Content Alliance (OCA).¹³ OCA is a joint initiative between Yahoo!® and Internet Archive, a non-profit organization. On the surface OCA is a serious commitment by industry actors like Yahoo! to the open movement, but the reality is that the knowledge commons has become a battleground for major content industry players. OCA was probably Yahoo!'s response to Google's popular initiatives Google Scholar¹⁴ and Google Print.¹⁵ Google's interventions further brought digital content to end-users' desktops. Infighting in the content industry can only be good for the open movements. Willinsky (2006) reported trends showing more industry actors previously opposed to alternatives 'open models' being forced to wholly, or partially, adopt open content models to fit in with the times.

The impact of open access movements is more evident in the scholarly publishing domains where numerous initiatives continue to emerge. The Public Library of Science (PloS) is a nonprofit organizations set up by scientists and physicians to make the world's scientific and medical literature a

¹⁰ Report available at: http://cyber.law.harvard.edu/home/uploads/823/BerkmanWhitePaper_08-10-2006.pdf

¹¹ UNESCO is part of numerous copyright and IPR related initiatives in addition to maintaining copyright resources at: http://portal.unesco.org/culture/en/ev.php-URL_ID=12313&URL_DO=DO_TOPIC&URL_SECTION=201.html

¹² WHO set up a Commission on IPR in 2003 whose report strongly noted the link between access to medicine and IPR. Report available at: <http://www.who.int/intellectualproperty/documents/thereport/CIPIHReport23032006.pdf>

¹³ Available at: <http://www.opencontentalliance.org/index.html>

¹⁴ <http://scholar.google.com>

¹⁵ <http://books.google.com>

freely available public resource.¹⁶ The Directory of Open Access Journals (DOAJ) was an important landmark in the quest for access to scholarly literature.¹⁷ The DOAJ catalogs open access and open content scholarly publications ranging from humanities to natural sciences to business and economics. Lastly Wikipedia is now a household name in a space of two to three years. The online encyclopedia is clear testimony of the potential of collaborative knowledge creation. Notwithstanding its shortcomings, perceived and real, Wikipedia is an invaluable starting point for research on a variety of topics. At the moment the encyclopedia is widely consulted by researchers and scholars for information or as an object of inquiry. Open access/content initiatives are numerous and emerge at rates too high to keep up with. For a not so recent catalog of these initiatives, Armstrong and Heather (2005) is recommended. This catalog was the first attempt at documenting copyright and related initiatives in Africa but as discussed below, Africa remains marginal to the debate on copyright in education and research.

3.3. Access and representation of Africa knowledge

Africa remains outside the scholarly and advocacy activities highlighted in the foregoing discussion. African scholarly work on copyright in education is not forthcoming. The most tackled 'problem' is copyright and photocopying (Okiy 2005) but no attempt at understanding the electronic environment. A recent study by Rens, Prabhala and Kawooya (2006) investigated the impact of intellectual property (IP) on access to knowledge in Southern Africa and rightly pointed to major factors affecting access as noted below:

Books are still largely inaccessible in the south whether on account of high cost, unsuitability of language and format, or, even more simply, plain unavailability. The open access textbook, on the other hand, costs as much as it does to print and can be available wherever necessary. Even a visible scarcity of knowledge goods in the main languages spoken in southern Africa could be alleviated by the permission-free translation choices presented by open access, since access to cultural goods in turn produces producers of cultural goods. The point to bear in mind is that access as a strategy is not predicated on the assumption that students of the south are consumers (and that professors of the north are producers), but rather, that a complex, interdependent relationship exists between consumption and production and furthermore, that access to cultural goods is a necessary and significant factor to stimulate production (Rens, Prabhala and Kawooya 2006).

The above study was particularly revealing about Africa's education settings. First, the study points to print as the most important access mechanism notwithstanding scarcity and high cost of books. Secondary, the study showed that the question of access is a multifaceted and complex issue mediated by several factors including costs and format which may, or may not be linked to copyright. Besides copyright, the study identified other access barriers including: unavailability and suitability of learning materials; resource constraints amongst African governments, outright stringent copyright, contract and trade laws, and excessive pricing of knowledge products (Rens, Prabhala and Kawooya 2006). I submit that access to e-resource in Africa suffers the same obstacles, particularly restrictive licenses, contracts and excessive pricing of e-resources. Universities and research institutions being on the cutting edge in use of e-resource are excellent sites for examining the impact of copyright on access and use of these resources. But what exactly is happening in Africa regarding copyright at institutional levels? Next this questions and related questions are addressed.

¹⁶ Information on PLoS available at: <http://www.plos.org/index>

¹⁷ Available at: <http://www.doaj.org>

Copyright is relatively new to Africa only imported to the continent as part of the colonial legacy (Boateng 2002; Nchwue 2005). As noted earlier there is little scholarship on copyright in education which is not surprising in light of competing and, seemingly, more pressing issues such as health care, education and poverty among others (Heather & Armstrong 2005). At the national level, African policy makers are only beginning to understand the link between the above problem areas and copyright. Unfortunately this understanding doesn't always translate into public institution friendly laws and policies (Rens, Prabhala and Kawooya 2006). Despite growing interest in copyright in education and research settings, institutions are not fully engaged at national levels. Many remain marginalized and, consequently, indifferent to the copyright debate and policy processes. Private interest groups are driving policy and legal reforms in most part advocating for stringent laws that are detrimental to proper functioning of public interest institutions.

Despite recent interest, copyright is not high on the agenda of most African countries given more pressing developmental challenges (Armstrong and Heather 2005). In most cases, the motivating factor for adopting copyright laws is the different international obligation to which African countries are committed. Local content creators, notably musicians, are actively involved in demanding legal reforms or new legislations. Increasingly laws adopted have immense significance for education and research to the extent that each time, they redefine access privileges and terms in scholarly and research environments. In light of lack of African research on copyright in education, there is need to consider these issues holistically by framing copyright in education and research contexts as broader developmental issue. The challenge of this study is examining the intersection of copyright, access to electronic resources and representation of Africa knowledge as critical to education and research which in turn contribute to socioeconomic development.

Thus far we have considered access but in the Africa's educational and research settings this is not simply a question of access but accessibility of African scholarship among other e-resources (Elich 2006). When approaching access to electronic resources and the impact of copyright on access, there is need to acknowledge and account for the disproportional representation of African knowledge in the global knowledge flows and how the contemporary copyright discourse contributes to that inequality. Revisiting the copyright debate is meant to carve out an 'African' niche in a seemingly settled debate. The notion of Africa as a net consumer rather than producer of knowledge is questionable although shared by Africans and non Africans (Nuachwe 2005). Likewise there is need to examine western knowledge systems like electronic databases as venues for distorting rather than advancing Africa's knowledge potential. As a result, the continent remains a marginal player in the global knowledge appropriation. Eve Gray (2006) succinctly captures Africa's dismal performance attributing this to a number of factors including failed research dissemination mechanisms. She draws from different sources to illustrate Africa's marginal position in the global knowledge flows:

Across Africa, research dissemination is conceived of almost exclusively as a matter of publishing journal articles, preferably in accredited international journals. This is to fail to recognise the damage wrought by the knowledge divide...[and] the ways in which African knowledge is marginalised in and through the systems, policies and hierarchies that govern this global research publication system. Research and dissemination output through scholarly journals globally is very skewed, with the rich countries of the North, which spend the most on research, producing over 80% of the most cited publications, while 163 countries, mostly developing countries, account for only 2.5 (Gray 2006).

The question of African's contribution to the global knowledge flows was the theme of the 2006 conference of the Council for the Development of Social Science Research in Africa (CODESRIA).

CODESRIA addressed dissemination avenues of African knowledge which partly contribute to the disproportional representation of African content. Delivering a keynote address to CODESRIA 2006, Lor (2006) distinguished between domestic African and international channels noting that, African authors who wish to publish internationally face various barriers, including bias (12). On the domestic front Lor noted positive strides in the work of organizations like the International Network for Availability of Scientific Publications (INASP) in building African journal publishing capacity but warned that problems remain in dissemination and reception of African journals outside Africa (12). According to Lor, the Internet and Web offer greater visibility than conventional print. This visibility is critical for African publications to garner local and international stature, and respect as outlets for quality scholarly work.

In support of online avenues for elevating Africa's scholarly and knowledge standings and visibility in the global knowledge flows Jaygbay (2006) observed:

The argument that the “prestige” of African scholarly journals (read publications) makes them less favorable for listing in recognized social science indexes is vacuously true because African scholarship remain largely underrepresented in most indexing services. It is the mere absence sometimes not the quality of the African publications that feeds the cynicism. There is growing evidence that improving the online presence of African scholarship through open access journals or available African consortia repository can increase the citation of African researchers and enhance the credibility of their scholarship (Jaygbay 2006, 9).

On a related subject, Elich (2006) was concerned by lack of 'African voice' in African studies often dominated by non-Africans (Elich 2006). Whereas African content doesn't have to originate from African scholars, lack of a critical mass of African scholars to articulate the African experience through scholarly publishing reinforces the notion of Africa as a net knowledge consumer than creator. Needless to say that publication of African scholarship should not simply be about visibility but also avenues for critical analysis of long-term socioeconomic development strategies of the continent (Gray 2006).

Jaygbay (2006) advocates for consortia content management systems (CMS) to aggregate African scholarship and make it easier to access locally and internationally. He argues that active participation of African scholars in content creation and archiving process is critical to legitimate institutional repositories and open access publications. Jaygbay (2006) rightly observed that:

inspite of the efficiency that African scholarship can gain from ICT, content management is arguably more of a process issue than it is a software and hardware issue (5).

Although not framed as a barrier, Jaygbay cautions that the copyright at the individual, institutional and consortia levels should be given special attention. Another dimension to copyright in education alluded to by *The Carnegie Reporter* article and one I address elsewhere (Kawooya 2006), is the fact that African scholarly output interfaces with 'unique Africa knowledge' or traditional and indigenous knowledge (ITK). This raises questions on the best approach to dealing with intellectual output from that scholarship. I argue that:

Contemporary African society is enmeshed in the global information society with attendant documentation, intellectual protection, control and commercialization of knowledge. Africa's institutions of higher learning are central to the cultural and

social transformation insofar as ITK intersects with research and teaching in educational settings (3).

Individual scholars working in ITK-related research rely on communal ITK resources to create new knowledge appropriated as private property rather than the collective community resources (Kawooya 2006). The copyright system embedded in the western individualist ownership values is antithetical to African's historically collective tradition thereby exposing ITK to misappropriation. I further note:

In academic settings, copyright, which protects expressive forms of ideas, covers scholarly output in form of articles, books, audiovisual recordings, etc. But ITK, much of [which] Africa's scholarship intersects with, may not be covered by the copyright system because it fails certain copyright criteria including proven ownership (9).

Against that background, traditional copyright imperfect as it is for education and research, is even worse for protecting African knowledge in the digital environment. Although traditional African communities and scholars whose scholarly outputs interface with ITK deserve economic benefits, protection here goes beyond economics to integrity of sacred artifacts of spiritual or cultural important to communities in question (Britz and Lipinski 2001). Consequently questions arise as to how African scholarship and knowledge output in the digital form can be openly shared at the same time guaranteed protection from misappropriation. This study attempted at addressing these and other representation questions.

3.4. The Ugandan context

Uganda a country of 24.4 million people gained independence from the British in 1962. Post-independence conflicts and political upheavals damaged the country's education and research infrastructure much beyond repair. Since mid 1980s, a minimum recovery program with emphasis on social service delivery including education was a priority to the reformist government of Yoweri Museveni Kaguta. The Museveni government has contributed significantly to the country's education infrastructure since the desperate conditions of the mid 1980s. Coupled with heavy foreign inflows both private investments and foreign aid in form of loans and grants, today the country boasts of significant macroeconomic growth. However, Uganda's highly touted economic growth is yet to translate into microeconomic growth to reflect improvement in household incomes and socioeconomic indicators. Economic indicators remain among the lowest in the world. Income per capita is \$300 as of 2006 and poverty levels at 38% of the population.¹⁸ Close to 80% of the population lives off substance farming in rural areas. Against that background, government had to intervene in form of universal primary education (UPE) to increase primary school enrollment from 2.7 million students in 1997 to 7.3 millions in 2003 (MOE&S 2005). As a result institutions sprung up at different levels to accommodate the growing student numbers.

Despite the low 'transition' rate,¹⁹ that is, continuation from one level to another, UPE's enrollment still constrains both public and private universities as UPE graduates begin to join post-secondary levels. Unfortunately, government priorities remain mass primary education and that is where education

¹⁸ Sources: British Department for International Development (DFID) <http://www.dfid.gov.uk/countries/africa/uganda.asp> and The CIA World Fact book: <https://www.cia.gov/cia/publications/factbook/geos/ug.html#Econ> .

¹⁹ Only 10% of pupils enrolled in primary schools make it to Universities (MOE&S).

resources are allotted. The rising university enrollment is not matched by resources allocation from government unlike primary level sub-sector which takes a significant portion of the recurrent budget allotted to the education sector (MOE&S 2005). Consequently Universities struggle to provide access to learning materials such as library and research facilities (Makerere University 2006). The government recently adopted the Strategic Investment Plan for Higher aimed at expanding and managing private investment in higher education as a way of getting around the higher education conundrum. Unfortunately the policy only shifts the resource problem to private institutions themselves faced with similar if not worse infrastructure problem as their public counterparts. UPE aside, a series of policies and programs have contributed to increased University enrollment including affirmative action where female students automatically receive additional points (1.5) to join public universities. Continued government sponsorship of close to 4000 students for each intake in public institutions has significantly changed access to education in Uganda. Universal secondary education now in offing will improve transition rates from primary to secondary level.

The pressure on the limited resources and facilities at universities has led to alternative access mechanisms. For instance, the petty photocopying enterprises observed by the Rens, Prabhala & Kawooya (2006) study at a major public university is partly a response to inadequate library resources. The photocopying infrastructure churned out 43400 pages per day (Rens, Prabhala & Kawooya 2006). E-resources that became available to most institutions recently, therefore fill major access and research gap at these institutions.

3.4.1. E-resources

With improving technological infrastructure, several databases and Internet resources are now available to education and research institutions in Uganda and other African countries. Initiatives for providing e-resources in Uganda and Africa s education and research institutions are numerous with varying degree of success and impact. Here I briefly discuss some including a donor-funded project coordinated by the International Network for Availability of Scientific Publications (INASP).²⁰ The Program for Enhancement of Research Information (PERI) is the first extensive multi-country initiative in Africa for delivering e-content to different universities and research libraries outside South Africa. Initiated in 2000, PERI provides access to full text journal and bibliographic databases from leading database publishers and aggregators including Blackwell, CABI, EBSCO, Emerald, Gale, Springer, OVID and IEEE among others. Over 14,500 full text online journals, citation, bibliographic and reference databases are delivered under PERI.

In addition to PERI, open access initiatives such as the Electronic Supply of Academic Publications (eSAP),²¹ eGranary²² and ePrints²³ are widening access to e-resources for research and instruction. These and other open access models widen and deepen visibility and accessibility of e-resources, African scholarship in particular. Internet use is widespread in education and research settings although still hampered by bandwidth and infrastructure problems. This study examined the extent to which copyright affected access and use of above resources considering that majority of e-resources are copyrighted and originate from outside Africa. These resources are available to both academic and non-academic institutions. The legal context in which there resources are used is considered next.

²⁰ <http://www.inasp.info/>

²¹ <http://www.fiuc.org/esap/index2.php?page=esaphome>

²² eGranary – based in Iowa, provides access to content free except cost of equipment (servers and related hardware).

<http://www.widernet.org/digitalibrary/>

²³ <http://www.eprints.org/>

3.4.2. Copyright laws and policies in Uganda

Copyright was introduced in Uganda by the British colonialists through the Copyright Ordinance of 1915 and subsequently the Copyright Act of 1956. Following Uganda's independence from the British, the 1956 Act was repealed by the Copyright Act 1964 Cap 215²⁴ that was later revised mainly to reflect Uganda's sovereignty. The Copyright Act of 1964 didn't not introduce substantive changes. Article 7 (2) in the 1964 Act on exceptions for education purposes defined fair dealing to include: criticism or review, or the reporting, parody, pastiche or caricature (5). The most recent amendment of the copyright law through *The Copyright and Neighbouring Rights Act 2006* introduced significant changes to including the *fair use* doctrine and provisions for collective rights management. Most precarious are the criminal sanctions justified on grounds of rampant music piracy. Criminalizing copyright infringement has serious implication for education and research in context of petty photocopying enterprises at educational institutions.

Changes in the Uganda's copyright law notwithstanding, hardly any cases went before courts to warrant those changes. Awareness of copyright is a fairly recent development due local demands by music artists to address the so-called music piracy to the mainstream media. This points to the fact that copyright was irrelevant to Ugandan contexts so were the reasons for its introduction by the British. Elsewhere I note that:

For a long time, the creators of intellectual property in the country [Uganda] were few; hence it is logical to assume that...[copyright] legislations were to protect 'foreign' authors. Legislations [were] of little relevance to the greater population which relied on oral tradition and culture for information access (Kawooya 2003, 222).

Until the early 1960s, hardly any publishing took place in Uganda. Kigongo-Bukenya (2004) notes that before then books and learning materials were mostly published in Britain and distributed through bookshops and a small public library infrastructure. This affirms the assertion that the introduction of the copyright law was to protect foreign materials mostly British than address local literary and artistic needs. Not surprisingly, the mismatch between local circumstances and the copyright legal infrastructure meant that copyright was outside the mainstream. Only a small elite section of the Ugandan society is concerned with copyright. Majority of the population in rural areas are unaware of copyright.

Analysis of court cases relating to copyright point to the same conclusion. Since 1964, only a handful of were brought before courts. Majority of the cases involved music piracy not educational materials. According to the official at the Commercial Court in whose jurisdiction copyright falls, most cases are settled through arbitration under the Commercial Court or settled out of court.²⁵ He attributes this to lack of copyright culture but also acknowledge the changing nature of economic activities that require observance of copyright and other intellectual property laws. At the time of preparing this report no case had been brought to courts under the more stringent 2006 copyright law.

The most significant and probably only case relating to learning materials involved *John Murray*, the

²⁴ At: <http://www.sipilawuganda.com/downloads/copyright%20act%201964.pdf>

²⁵ Based on a private conversation with the official in charge of arbitration at Uganda's Commercial Court.

plaintiff against *Senkindu*, the defendant. *Senkidu* was accused of illegally reproducing and distributing a popular high school biology textbook *Introduction to Biology*. The Court heard that the plaintiff a London-based publishing company distributes the textbook through local distributor, *Aristoc Booklex*. Due to the popularity and high costs of the textbook, it was alleged that *Ssenkidu* resorted to making (or acquiring from a printer) cheaper and lower quality copies of the book. In defense *Senkidu* admitted to selling counterfeit goods acquired legally through a third party, based in the neighboring country of Kenya. The plaintiff successfully applied for an injunction including seizure of all counterfeit goods. Court also awarded damages to the plaintiff.

Although this case attracted media attention, it didn't have significant impact on the informal activities around learning materials not widespread awareness of copyright. However, cases involving music and the broadcasting rights are on the rise with expansion of Uganda's music and media industries. Majority of the cases are difficult to trace because many are never decided but privately disposed off through arbitration or out of court settlement. However, it's likely that in time music and media-related cases will go to full hearing. With media attention associated with court proceedings, such cases are likely to have chilling effect on copyright practices in education institutions.

4.0. The Study

The study was conducted in education and research contexts to leverage institutional potential for policy change at national and international levels. Drawing from the leading role universities played in diffusion of Information and Communication Technologies in Africa, universities are important venues understanding impact of copyright on access to e-resources. Overall, universities are well situated to influence copyright policies at national and international levels.

This section presents the study sites, methodology, and findings from focus group discussions, interviews and document reviews. The study was conducted at three institutions: a public university, a private university and a research-intensive fisheries institute. The three institutions share emphasis on research as a primary or one of the core functions. In addition the institutions share common challenges including resource constraints for supporting research, and dissemination and utilization of research findings. Of the three, only Makerere had a university-wide policy on copyright (Intellectual Property Rights Management) and even then, Makerere's policy was at draft stage. Institutional policy is mentioned here not that policies are ends in themselves but in the framework of copyright and access, an institutional policy reflects attempts at systematically addressing the phenomenon.

Below is a detailed discussion of the study sites, methodology, data collection and analysis, and presentation of findings. Conclusions and recommendations are presented in the last section.

4.1. Study sites

All three institutions were physically visited to conduct focus group discussions and/or interview faculty, students and administrators where possible. All have access to e-resources through the PERI program discussed earlier. Below is a brief background on each institution.

4.1.1. *Makerere University Kampala (Mak)*

Makerere is a 'typical' public university in Sub-Saharan Africa (SSA). Like many institutions in SSA, Makerere contends with soaring student enrollment amidst limited facilities and research resources. Started in 1922 as a technical school, Makerere became an affiliate College of the prestigious University College of London in 1949. In 1963 Makerere became The University of East Africa turning into an independent institution in 1970. The University struggled to maintain her prestige during Uganda's turbulent times of the 1960s through the mid 1980s. With a student population of close to 30,000, institutional facility, libraries in particular, have room for improvement to meet the needs of a large student and faculty body. Institutional inadequacies to provide sufficient research facilities render ancillary businesses like photocopying enterprises mentioned earlier critical in filling gaps. Makerere contends with globalizations challenges requiring preparation of human resource capable of functioning in local and global contexts. Consequently the tendency is for individuals, usually faculty, with recent copies of publications making them available through photocopying as a means of sharing publications. Makerere is leading in e-resource use given the robust ICT infrastructure. Makerere receives more public resources than other universities. Makerere is one of the core institutions receiving financial support from the Partnership for Higher Education in Africa. The Partnership was formed by four leading US foundations.²⁶ Some of Makerere's e-resource and ICT programs are supported by the Partnership resources. E-resources support Makerere's research activities but remain a far cry from sufficiently addressing Makerere's research needs.

4.1.2. *Uganda Martyrs' University, (UMU) Nkozi*

Uganda Martyrs' University is private institution owned by the Catholic Church in Uganda. UMU is a relatively small institution with a student population of slightly more than 2000. UMU was founded in 1994 based on strong Christian principles that are reflected in the emphasis of spiritual and moral development of the individual and society.²⁷ UMU is actively seeking practical solutions to Uganda's and regional development goal through well focused education and training programmes. UMU started various programs aimed at preparing students to serve in strategic sectors of Uganda's and regional economies. UMU's African Research and Documentation Centre is one of the few specialized African Studies Institutes resident at an institution of higher learning. UMU's internationally acclaimed faculty attract students from across Africa. Occasionally European and North American students spend short attachments at the university. The University library is one of the best stocked in Uganda at the moment with relatively recent publication and 24hour Internet connection. Of significance to this study, UMU is one of a handful of institutions that adopted use of open source software as a university-wide policy.

4.1.3. *Fisheries Resources Research Institute (FIRRI)*

FIRRI is a government research Institute under the National Agricultural Research Organization (NARO). FIRRI promotes streamlining of fisheries research, dissemination and application of research findings (FIRRI 2006). FIRRI's research activities are crucial to Uganda's economic development.

²⁶ These include Carnegie Corporation of New York, The Ford Foundation, the John D. and Catherine T. MacArthur Foundation, and The Rockefeller Foundation. More information at the Partnership website: <http://www.foundation-partnership.org/index.php>

²⁷ www.ficu.org/umu/about/index.html

Uganda shares 15% of Lake Victoria, the world's second largest fresh water lake. Fish contributes \$100 millions annually from export to European markets making fish export the biggest foreign exchange earner.²⁸

4.2. Methodology

The study was grounded in the qualitative research paradigm and methods including focus group discussions and interviews for data collection. Qualitative paradigm enables in-depth examination of the phenomenon in unstructured format (Maxwell 1996). The goal is not extrapolating findings to other situations, although that is possible in similar contexts (Taylor & Bogdan 1975; Maxwell 1996). Recommendations from this study, therefore, will possibly apply to institutions and countries with similar contexts.

Data was collected through literature reviews, focus group discussions (FGDs) and interviews with different groups representing academics, students, researchers, digital librarians and administrators/policy makers. FGD is a powerful tool for data collection from carefully selected participants that are versed with the phenomenon under investigation (Krueger & Casey 2000). FGDs enlisted deep understanding of access and representation issues from participants. FGDs tapped participant experiences in use of electronic resources for research and academic exercise. Whenever possible, participants were notified in advance of group discussions and interviews. UMU participants were notified through a local contact at the University library. At Makerere and Nkozi, fieldwork coincided with the recess term which complicated access to participants. Majority of the participants were on campus for the recess term. FIRRI participants were notified and mobilized by a local contact.

The first phase of the research project focused on reviewing relevant literature exploring issues ranging from e-resource access to representation of African content. Next was securing Government permission to conduct fieldwork through the Uganda National Council of Science and Technology (UNCST). Thirdly, FGDs and interviews were conducted over a period of seven weeks between July and August. FIRRI only permitted short interviews not to disrupt researchers' busy schedules. Faculty interviewed at Makerere could only afford individual interview not FGDs. FGDs were limited to students except at UMU where faculty members agreed to a FGD. The busy schedules of faculty members make it difficult to coordinate meaningful FGD let alone individual interviews. Interview and FGD guides constructed prior to the fieldwork, were refined as the study progressed to allow for exploration of emerging themes in greater depth. FGDs and interviews were tape recorded and notes taken by a research assistant for some of the FGDs. The researcher always moderated the FGDs as the assistant took notes.

Eight FGDs were conducted, 6 with students in Makerere and UMU and 1 with faculty (six participants) and one with librarians (3 participants) at UMU. Student FGDs had 4-5 participants both graduate and undergraduate students. At least each FGD had a male or female participant although gender was not originally considered a major factor. Eight individual interviews were conducted at Makerere and FIRRI. UMU and FIRRI are located out of Kampala 84 km and 90km respectively.

²⁸ <http://www.firi.go.ug/Training%20&%20Outreach.htm>

4.3. Data handling and analysis

Audio data for FGDs and interviews on tape recorders were transcribed into Word document. Transcripts were cleaned mainly through editing for language to bring out meanings better. Transcripts were compared with field notes to ensure accuracy. Interview transcripts were separated from FGD interviews. Since only one faculty FGD was conducted, in the final analysis, it is considered alongside the faculty and researchers' interview data.

Data analysis involved reading transcripts and developing themes corresponding to questions from interviews and FGDs. Different related themes were grouped and collapsed into major themes. These themes reflect the problem areas raised in the interviews and FGDs. Problem areas address the research questions, on one hand, and form the basis for the policy recommendations, on the other. Findings presented below are organized around higher-level abstract themes emerging from the combined interview and FGD data. These themes are: research and knowledge creation; copyright awareness and the African situation; e-resource use and search engines, and African content representation.

Secondary data in form of pamphlets, fliers, booklets, manuals were collected during fieldwork. These documents supplemented interview and FGD data. Several pamphlets and fliers providing detailed information about the institutions. Makerere University's draft policy on *Research and IPR Management* was the most significant. This policy document is analyzed in detail as part of primary data and treated as a case-study of how institutions are dealing with copyright in education and research activities. Makerere's draft policy, if adopted, will likely have considerable influence on other institutions in Uganda and Africa. The other two institutions didn't have policies (or guiding) on copyright.

The study findings are presented next starting with findings from interview and FGD data followed by a brief cases-study analysis of Makerere's draft Research and IPR Management Policy.

4.4. Study Findings

Some of the 'high-level' themes constructed during data analysis reflect actual questions from the FGD guide others emerged out of the data. However presentation of the findings follows a logical approach to the interviews and FGDs where interviews and group discussions progressed from general questions, or issues, to personal questions around copyright, knowledge, access and use. Finally participants pondered over institutional questions mostly on policies and practices, or lack thereof.

To ensure maximum participation, questions were framed in such a way as to bring out individual experiences in their unique contexts. For instance, rather than asking 'what is copyright?', participants would be asked for their understanding of copyright? Oftentimes such a question would be clarified to show it is seeking their opinion rather the 'correct answer.' In exploring these issues, scenarios were built where participants assumed e-resource end-user roles. Discussions that ensued as a result focused on participants as users of other people's knowledge in the course of creating own knowledge.

The second scenario was that of participants as knowledge creators. Here the focus was on knowledge created as student's research, faculty or researchers. These set of questions and discussions enlisted useful information on knowledge creation and dissemination, general awareness of copyright as an access issue, and institutional policies and practices on copyright and related matters. The findings

presented below should be read and understood in that context. Presentation of findings is mostly descriptive.

4.4.1. Research and knowledge creation

For academic and research institutions, questions on research were excellent entry points for both FGD and interview methods. Students were asked whether they engaged in any research, be it formal studies or part of coursework.

Faculty were presented with a similar question. One would assume that faculty involvement in research is a given. At least as one faculty member put it that heavy teaching workload simply left no time for research and indeed a sizable number of faculty participants admitted to either not publishing at all or publishing irregularly. A faculty member mused that they cannot be expected to abandon teaching, which their employers pay more attention and, therefore, the 'bread winner' to turn to research which is a long-term goal. Clearly at this institution, more teaching was conducted than research although it wasn't exactly clear that one was privileged over the other. For researchers, particularly FIRRI scientists, the question was not whether, they engaged in research per say but how they utilized e-resources to support their research work. Research is what we are hired to pay, I was reminded.

Questions on research and knowledge creation enlisted interesting responses. Students generally indicated that research was required at least as the culminating experience for each program of study. Many, especially graduate students, engaged in small studies during coursework leading to short-term papers or research publications. However it was clear a number of students conducted research out of institutional requirements not personal initiative or contribute to knowledge creation. Whereas some viewed this research as additional requirement and presumably a burden, some thought research was an important skill likely to find application in work environments. There were clear disparities between undergraduate and graduate students in the approach and attitude towards research. Some graduate students, for instance, consulted journal sources as opposed to general search engines like Google used 'religiously' by undergraduates.

Institutions with relatively more resources provided better services to support student and faculty research. For instance students and faculty at UMU which has a small campus population and full time Internet connectivity reported heavy use of e-resources alongside print resources. At Makerere with significantly larger student population and relatively unreliable Internet connectivity coupled with high student computer ratio, access to e-resources was low among undergraduate students. Some resorted to workplaces to access e-resources. Many still used print resources to fill the gaps but also mentioned use of general search engines, Google in particular. For print resources there was general reliance on public libraries but occasionally students bought own books when strongly recommended by the lecturer for future study.

It was intended not to desegregate research findings between faculty and researchers according to institutions, that is, Makerere, UMU and FIRRI. The idea was to report findings, especially peculiar occurrences in general regardless of parent institution. However the general consensus by researchers interviewed at FIRRI on open dissemination of research findings was remarkable and unique to the institution. They identified formal and informal outlets for information dissemination including stakeholders village gala, for instance with fishermen who are considered important stakeholders. Open sharing of research output is a means to advance the field but as well as benefit one's professional

visibility. FIRRI researchers however reported constraints in disseminating research findings sometimes due to stringent contractual arrangements with funding agencies. Since FIRRI is part of Government's agricultural research infrastructure, policies and guidelines on research in general copyright in particular were always bound to take long to develop let alone update.

Some faculty at Makerere and Umuhozi didn't submit to the idea of openly sharing their work without direct economic or financial reward. However both FIRRI and University researchers thought that some form of intellectual property system was necessary to protect their work in electronic environment. Umuhozi faculty were skeptical and dismissive of intellectual protection of their research. The more animated debate around participants as users of other people's knowledge happened when considering the question of copyright as discussed below.

4.4.2. Copyright awareness and relevance...the 'African Situation'

"Copyright is intellectual colonialism...the west is benefiting from African content"

The sentiments above expressed by a faculty member illustrate the level of interest and awareness around copyright in university and research communities. However, we also learn from the statement, the controversy surrounding copyright in Africa's education and research environments, call it the 'African Situation.' The same participant attested to never copyrighting her work, or encourage copyrighting work she supervises. Copyrighting, according to her, goes against traditional 'African values' of sharing knowledge and information. Many participants blamed copyright for creating access barriers by requiring payment for education materials in electronic environment:

In most cases because of copyright itself, especially in the western world, you will find that they will have so many limitations. They could give you a page or two and then direct you somewhere for which if you have to log in, you will have to part with some money, which has not been practical in most of our African situation

The 'African situation' was mentioned by most participants at the three institutions. Practicality of copyright in this situation was doubted or simply dismissed for a number of reasons. For instance some participants noted that once one has discovered a relevant material say an abstract off the Internet, normally you are led to the source of the fulltext of the same material. Unfortunately, at that point, one is required to pay subscription fees using credit cards which are not widely available to students and faculty. A student participant vividly described an interesting experience involving his Dean:

Sometime my Dean was telling me that there were some materials he wanted and he was expecting a bill from these guys [database publishers] for having been able to access that [material]. He told me that he was advantaged his fellow realized that he was from a University in Africa so they forgave [waived fees] him otherwise he was supposed to pay around £700.

The practicality of paying for materials from Africa is doubtful. But more instructive about the above case is the cost of the materials that are priced beyond most if not all faculty and students. Ofcourse the participant never mentioned specifically what the materials were but factoring in Uganda's income per capita, we can be certain that very few can afford the above materials. This is the second dimension to the 'African situation,' the high costs of e-resource subscriptions. Although for the last few years the trend is astronomical increases in subscriptions costs to scholarly materials worldwide, the 'African

situation' is one where even the lowest prices would burden or alienate most institutions. Most faculty, students and researchers highlighted this 'African situation' in relation to copyright citing high costs of e-resources whose subscription is beyond most African scholars.

A student participant in an FGD specifically cited hindrance of future research should copyright be introduced in, what at the moment, they construct as their copyright free environment. It is considered copyright free because photocopying of books happens unabated not out of criminal intent but economic circumstances. The participant emphatically argued against copyright because on the Internet, copyrighted services [where a password is required], are limiting what they [students] can access or not. Introducing copyright in this 'Africa Situation' will likely take the non-electronic resources in same direction.

Some undergraduates made informed arguments about copyright and as one of them pointed out, "if someone doesn't want others to know what he has done, then no more research will be done about that particular topic." Another was careful to qualify her case against copyright suggesting that as a 'non-writer', she looks at issues differently. Indicating that may be if she were a writer, she would think otherwise. This participant was convinced that copyright cannot work for books [in Uganda] a sentiment expressed many times by different students and faculty. One student described and attributed the situation thus:

the photocopier operator wants money and we [students] don't have money [for new books], what do you think the operators of photocopiers will do? Copyright cannot work here.

Another one interjected,

for us here we don't mind about that...you just go photocopy you get your own book [copied], you go to the main library [and] bind...our library itself has got photocopies of books. That is what we borrow. So once you see a book, go photocopy even if you see the words 'copyright' reserved...we don't mind about that because we don't have that much [money] to buy those books anyway.

The above sentiments should not necessarily be understood as students fighting the system but socioeconomic reality of high education in Uganda and Sub-Saharan Africa in general. Indeed a participant rightly attributed photocopying to the state of economy [Uganda's] and people not being able to afford the books. She also observed that many books are rare that the only way to access them is through photocopying.

The library making photocopies was put across to show how 'bad' the copyright situation is, else why would an institution like the library engage in photocopying? Yet this also points to the fact that awareness of the copyright system was limited to general principles. Majority simply assumed any photocopying regardless of purpose was illegitimate. For instance the possibility that the library or even student photocopying is within fair use for educational purposes was rarely cited as sufficient grounds to photocopy.

A digital librarian admitted openly on the lack of basic information on copyright but also library guidelines on the matter. As revealed by this librarian, institutions are only beginning to think about copyright within institutional services delivery:

Most of these things [copyright] are being set up. If people know about copyright, it's from

whatever they read.....We want our users to look at it [the resources] and take caution. Those are some of the things we want to incorporate in the use of e-resources in the scholarship bit and right in class. Because it should come from lecturers...all faculty. The students should know what they are doing and when they are doing in relation to copyright. In the US because when you look at most of the institution website. It's clear cut ... you know. You have some information guiding you which we're lacking. Those are some of the things we are trying to prompt the institution to generate.

The above situation happens at an institution offering several commercial databases and currently working on an institutional repository. At least at the library level, the copyright question or more appropriately intellectual asset and access to knowledge has not been addressed. At this institution, however, the copyright question is being addressed through the draft Research and Intellectual Property Rights (IPR) Management Policy. The draft policy, whose utilitarian approach to copyright will likely influence directions of other institutions in the country and region, is discussed in the last section of the findings.

Faculty also shared concerns about copyright in this “African Situation” as we learn from a faculty participant who, in addition to the faculty scholarly environment, drew from the music industry to illustrate the point:

...to me that is a very tactical question and there is a lot of challenges. ...particularly on the copyright. I want to look at it from a different angle and I think the challenge comes from the environment itself. For me I would think the issue of copyright works only in specific environments may be to a certain society. Because when I look at our environment our setting here, I think the issue of copyright doesn't work and that is the biggest challenge I see. Even the article you produce may be I have published something may be even before I have launched it already someone has a copy and can change just a little and republish it. I started by saying this might not in work setting because when I look at our local settings, when I go to town, you find a local artist has just produced one CD and has not sold it and there are already people reproducing it. To me the issue of copyright is a big challenge. I don't know... may be at the end of this [discussion] we shall come with a forward but I don't see...*[underlining emphasis added]*

If the above faculty didn't effectively bring out the “African Situation” and its underlying economic challenges and sociocultural features on knowledge creation and sharing, the next one did just that:

someone at one time put me to task to explain to her why I am a strong proponent of open source. I just told her if I think like an Africa, issue of limiting people access to something, in the African sense it does not exist. It doesn't exist. When we are growing up we have [had] access to everything. Despite having access to everything we're not allowed to steal. Stealing like plagiarism was really punishable because when you steal you will be punished. But you having access for example to your neighbor's piece of land...the fruits there and sharing with your neighbor's children was never a problem. Copyright is like...you see that fruit there? It is there but you are not allowed to touch it whatsoever even if the neighbors children are there, you are not allowed to access it. Which up to now is a foreign...*[concept]*... People who have grown up in our environment they still have problems really really comprehending the whole issues surrounding copyright in the African context. If you come to the practical aspect of it, telling everyone of us around to buy a book may be by the time it gets here its around ... it will be something like \$200, it's really not practical. It is still not practical. *[underlining emphasis added]*

From these extensive quotes we note the passionate attempt at explaining the mismatch between copyright and the “African Situation”. Taken together, the above submissions illustrate the need to critically think about copyright in this situation. Awareness and relevance of copyright is tied to the notion of the “African Situation”, a very important metaphor as we note from above and later in the discussion. The ‘African Situation’ as noted in the opening phrase represents the struggle to define Africa’s understanding and voice in the discourse around copyright dismissed based on the old but in case of copyright, still relevant colonial rhetoric. This colonial ideological slant dismisses copyright on grounds that African intellectual output doesn’t perfectly fit the western notion of copyright. So copyright can only be a tool for exploiting Africa’s rich content but also a device for turning Africans away from their knowledge and resources, as clarified by the faculty member whose statement opened this discussion. In that sense, the African situation manifests as a significantly different socio-cultural experience and reality from the western situation.

However, in context of pricing and accessibility of e-resource, copyright as an intervening factor is a serious mismatch to the 'African Situation' primary on economic grounds. Majority cannot afford nor do they have access to requisite technology to make electronic payment for the materials they are trying to access. The economic dimension is articulated better in the next section on e-resources and copyright.

4.4.3. E-resource use, copyright ... and the Google factor

Although access and use of e-resources in Africa is very much an infrastructure question as repeatedly mentioned in this report, this study and the analysis below examines access to content from the copyright dimension, where copyright is an intervening factor in use of e-resources. That notwithstanding, infrastructure at participating institutions is sufficient to support delivery of educational content in 'high-end' formats like PDF. Second, bandwidth is high on the agenda of the Partnership for Higher Education in Africa mentioned earlier.²⁹

Some ICT facilities at participating institutions facilities are comparable to those available in North American and European institutions. ELIN database search interface used at Makerere is capable of searching and returning aggregated results from several databases, storing results in both abstracts and full text, and managing the result over a period of time. UMU, on the other hand, pursues an open source platform at different levels and is leading education and research institutions in open source in the country. A fulltime computer scientist that supports the system is part of a growing open source community actively involved in developing localized applications. UMU is also boasts of a small student body and, therefore, infrastructure that isn’t too constrained or overwhelmed by numbers. Lastly, FIRRI scientists are fully connected to a relatively fast Internet infrastructure. Each scientist has a personal computer and/ or laptop for fieldwork. As one FIRRI participant mentioned, researchers have since entered a totally different world where information that previously took months to get to their desks is now a few clicks away! Findings presented below on access to e-resources and copyright should be situated in the above contexts.

Although databases were the primary focus for this study, many participants especially undergraduate, had neither used nor heard of scholarly databases. Even some graduate students, doctoral students

²⁹ The summer 2005 article mentioned earlier dwelt with the bandwidth issue in African universities. The Partnership for Higher Education, of which Carnegie is a member, is investing heavily in addressing the bandwidth problem in the next few years. <http://www.carnegie.org/reporter/>

included, didn't turn awareness of these databases facilities into actual use. Use of databases requires skills, efforts some students are not willing to invest. A digital librarian at Makerere noted:

Many times they [students] will tell you, it is easier to Google than [use] the database and it's because they have not ventured into how to appropriately enter into the databases. They know Google because they will put in something and get out something and use that. So that is what is happening even with the PhD students. Yeah they prefer going to Google much as we direct them [towards databases]. They may not be looking in that line. They still go to the... [search engines].

This situation wasn't unique to this institution, as the second institution also manifested the Google bug! A graduate student participant at this institution raised Google's stakes even higher:

I have not used them [database resources]...I see them on the intranet but I haven't. [Researcher: why?]. No particular reason. First thing when I am looking for information I go to Google if I don't find it I go elsewhere.

Another Google proponent was more cautious:

why Google is appropriate for me in some of the cases, I am not looking for scientific data. I want opinions to support my own opinions. Google gives you a wide range of information.

The choice of search engines as starting point for research led to rethinking the scope of 'e-resource' above and beyond scholarly databases to include a range of Internet-based resources and retrieval facilities including search engines. As a result, the definitional scope of e-resources was expanded to include 'Internet resources.' However, discussions with participants that indicated awareness of databases centered on these rather than general Internet resources.

Most participants linked copyright to proprietary resources in the electronic environment. Consequently, any payment required to access content such as e-books, databases and any subscription-based services was a result of copyright. Costs associated with e-resources were the grounds on which copyright in the electronic environment was mostly dismissed by students because many can't afford associated fees. A graduate student on one of the FGD was blunt:

in any case here in Uganda, that copyright thing cannot work....its not active...I don't know what to call it...yeah its not emphasized.

Is that a view everyone shared? Prompted the researcher? Yes the rest responded.

You can't worry while photocopying that someone is going to get me [engaging in illegal activities]. Once you go to those people [book sellers] it can cost you say \$30, but here...let me say \$5 [or] \$10 to get that book, ... the moment someone gets hold of a book, he will download it and print. No one is concerned [about photocopying]...

Participants mostly drew from non-electronic uses to explain the copyright situation in the electronic environment. That notwithstanding, it's clear that copyright to most participants is a misplaced policy in education and research contexts. In addition to the socio-cultural reasons mentioned above, some participants blamed this to the 'archaic' law:

personally I hear that law [copyright] is just being developed in our country. The penalties are

not worth it...if the penalties are there, they could be there but so minimal. Our laws are very old, they are so archaic, they need to be modernized. Presently I think they are trying to put in place a law on copyright...in our country. But they are not effective at all. I remember there is a singer who copied a song from a counterpart. If the copyright law was effective, the person [who lost the song] would not go on shouting at the top of his voice, he would have gone to the courts of law. But it went on for so long. At the end of the day, if the laws were stipulated very clearly, they would have gone to courts of law.

Ideally the law is blamed for not forcing desirable behavior but Uganda's situation doesn't exactly fit the scenario described by the participant. As earlier noted, at least one case went before Courts and was decided under the 1964 Act, which one lawyer thought was a strong but untested piece of legislation. Other cases were settled out of Courts or went to arbitration, presumably under the framework of existing Copyright laws. Even the newly enacted 2006 Act remains dormant in an environment of 'rampant' criminal activities in copyright-related areas like music. A weak legal infrastructure is, therefore, an excellent scapegoat but fundamental social challenges that contribute to people's attitudes toward copyright remain. Another student felt strongly about universality of knowledge suggesting that academic knowledge should be universal, "like wise men like Plato and so on [chose to share]." This sentiment probably explains the reason why copyright, whether in electronic and non-electronic environments, attracts so much resentment.

The fact that access and use of e-resources is closely tied to copyright to the extent that any form of subscription is perceived as copyright-induced, presents major challenges for copyright policy in Africa's education and research contexts. Indeed a faculty member suggested the need for alternatives to copyright in light of the Uganda's socioeconomic realities. Though influenced by the global open access and content movements mentioned earlier, his choice of open content and open access approaches were clearly well thoughtout to fit local circumstances. He suggested a university policy that makes research products like publications openly and freely available except application of the same for commercial purposes and outside of "Uganda's development contexts." The commercial scenario is more or less established in the international copyright system. Discrimination along national lines will be a first but probably one that very poor countries need if they are to benefit from their creativity.

In light of the situations and experiences described above, preference of Google resources is not simply a case of ease of access. May be it points to ease of access to content that is open to use as opposed to proprietary content locked behind technological protection measures that require authentication. This school is supported by a comment from a digital librarian who mentioned in passing that even faculty and researchers mostly used scholarly databases where their work as appeared. Use of these resources was to keep track of their work, and possibly developments in the field represented in such database. Google factor as a metaphor in reference to easy-to-access e-resources as opposed to hard-to-access proprietary and non-proprietary database resources is one we explore further in context of open access policies but one that is clearly needed in Africa's education and research contexts.

4.4.4. African content representation

There was general agreement that African content was scarce in the electronic environment. A number of factors were raised including lack of resources to upload African content, poor writing cultures to inadequate infrastructure. One reason was particularly revealing, that is, researchers competing

amongst themselves and hence reluctant to openly display [in electronic environment] what they do. A participant explained it thus:

Sometimes they have their own motives...I don't know how to put it. They just have that thing...culture of secrecy.

As a result, according to this participant, there is a general absence of local research output not because content isn't generated but deliberately kept secret. To access this content, one has to physically visit individuals or organizations where they [researchers] are employed to gain access to print formats like pamphlets or reports. Sometimes one has to visit government departments or ministry resource centers to get that information. The system of secrecy is so prevalent in government departments that access to resource centers often entails formal introductory letters from one's parent organization, in this case the university. A participant narrated her attempt at getting information from a local organization...

We were doing something on human rights in Uganda so we went to organization X. They [of organization X] said no go back to Human Rights Commission and get letters explaining why they want this information and what they want to use it for....that kind of stuff...may be some don't release information for confidentiality I would think.

Had it not been the case that this information was eventually granted minus the letter, confidentiality and privacy would be excellent reasons for the bureaucracy. But probably these were not the reasons. However, secrecy as a barrier to African content wasn't widely supported beyond a few participant as the case was for bias against the Africa content and infrastructure inadequacies.

Representation of African content in the digital environment always raises questions of bias whether legitimate or illegitimate. Bias that many western publishing outlets are accused of perpetuating is usually associated with quality of African work. It was surprising that this issue emerged from some student and faculty focus groups. When asked whether universities should consider placing students work on the Internet to improve visibility of that content, question on quality and originality of that work were raised. A graduate student complained that:

Lecturers are sometime accused of malice when actually the student's work is so poor. When they get fed up, they simply say you binder and awards whatever marks. Some students don't want to admit their mistakes when they say they are malicing them. I have seen those cases. What they lecturer does is to tell you go ahead and bind. He has his form which he uses for marking. He will mark. In fact they are talking about stop putting dissertations in the library because they are of poor quality. What most people do, they go to the library, get someone's work, copy and paste. You don't know what marks someone got....you just copy and paste.

On cross checking with other FGDs, I established that cases like the one described above are exceptions. Such exceptions are no justification for alienating African content in the digital environments. Indeed discrimination against African content was a generally shared view as one student noted below:

I think the effort is put in to send those materials [African content] but since the discretion to up that content lies with those people [western database publishers], there is still that discrimination. It [is] like who matters in this case...if you are presenting [what] will give them some money, they will put it there. It's like the give priority to their content so much.

As a remedy participating institutions either had established, or were in the process of establishing, institutional repository to get around lack of local content in the digital environments. Makerere's institutional repository represented the most ambitious initiative although agreements between contributors [faculty and researchers] and the institution were not exactly clear at the time of launching the initiative. Makerere's draft policy discussed below, throws some light. Lack of clear guidelines for institutional repositories notwithstanding, such initiatives are one of the most viable way of getting African content in the global knowledge flows (Jaygbay 2006 ; Elich 2006; Lor 2006). UMU's African Research and Documentation Centre collaborate with the University library to collect and preserve artifacts representing scholarly endeavors. The Centre also coordinates a small but promising faculty publication program.

FIRRI's information resource centre started a small collection of researchers' publications as fulltext or abstracts. As a matter of fact FIRRI's research dissemination programs deconstruct secrecy claims made earlier. A research observed:

publication is out pride. When things were [research activities] are at the initial stages there is [was] no booming but now our things have changed so much that we must be closer to the stakeholders [users who live close to water resources]. Even when we go out to the field, priority goes to stakeholders. As I am working, the stakeholder must be working besides me. Even when I find out about this [research findings] I can even ask him...what is this? Because they are closer to the resource than we researchers. We do research concurrently [with stakeholders] and comes up very nicely. Another thing is that during those olden days, things used to be in boxes [hidden]...[one could] can even write something and put it there...we have moved to the stage of going to the lake with the stakeholders, writing something and even organizing a symposium, they come and participate. We can write something technical ... reports which are distributed [them].

FIRRI's approach is probably expected being a government agency and, therefore, publicly supported organization. But close working relations with stakeholders and the move towards digital repositories available online demonstrates commitment to openness which is a prerequisite to visibility of African content.

Where is copyright in the representation debate? Copyright was not widely blamed for lack of African content in the digital environment. Participants only considered copyright when prompted by the researcher but even then, many did not strongly emphasize it as a major factor. Structural problems rather than intellectual protection are the major huddles to representation and visibility of African content in the digital environment. Institutions demonstrated viability of institutional repositories as alternative venues for presenting African content to the world.

In light of the copyright-related challenges for Africa's education and research institutions above, it is only logical that institutions considered policies or guidelines to address access challenges and situational contexts in which access happens. Next is the presentation of Makerere's draft policy on Research and Intellectual Property Rights (IPR) Management. The policy is presented as a case study but also directly tackles the third research question in this study.

4.5. Case study of Makerere's draft Research and IPR Management Policy

Although UMU has policy on open source software, no such policy on content existed at the time of the fieldwork. Likewise FIRRI was in the process of developing an IPR and research policy under the NARO. FIRRI's case is complicated by the fact that the Institute is one of many agencies under NARO, itself a government agricultural research agency. By implication, the policy choices made by NARO partly reflect direction of government on intellectual property, at least in the agricultural sector. The linkage with government is ground for bureaucracy and caution, since the same government passes and enforces laws. Participants shared views on university policies on copyright and related activities including granting institutions rights in their work, access and use of institutional e-resources and other related matters. However, Makerere's policy is preferred to views of the participants to the extent that Makerere's draft policy is likely to set off similar policies across the country and the region.

Makerere was the only institution in the process of developing a research and IPR management policy warranting closer examination of this document. A plausible assumption can be made that Makerere's direction might influence other institutions. Makerere is the oldest institution of higher learning in Uganda and one of the oldest in Eastern Africa. The analysis that follows doesn't cover all aspects of policy but those of consequence to this study and access to knowledge. The policy doesn't cover ICT infrastructure and resources, a subject of a different policy document which is not analyzed in this study but acknowledged as critical to full understanding of Makerere's approach to copyright (IPR) and e-resources. The analysis of Makerere's policy on research and IPR management should be read as an abridgment of a relatively comprehensive document addressing a number of issues.

4.5.1. Background to Makerere's Policy

The process to develop Makerere's research and IPR management policy dates back to 2004 when the Board of *Research and Publications* caused the formation of a committee to develop the policy. The graduate school being at the helm of Makerere's research activities initiated the debate around IPR in relation to Makerere's research activities. Makerere's research profile in areas like HIV/AIDS, agriculture, engineering and natural sciences is unrivaled locally. Makerere's medical school is home to prestigious research facilities like the Infectious Diseases institute and the internationally renowned Makerere Institute of Social Research (MISR). Soon or later the institution had to address the intellectual property question within the research infrastructure framework. However, it's not clear how consultative the policy development process was and whether the draft policy reflects institutional realities that can only become apparent through a broad consultative process.

The draft policy recognizes the importance of research to Makerere's mission to provide “quality teaching, carry out research and offer professional services to meet the changing needs of society by utilizing world wide and internally generated human resources, information, and technology to enhance the University's leading position in Uganda and beyond” (Makerere University 2006,1). The policy acknowledges Makerere's current problems and challenges in advancing a sound research agenda including:

- i) lack of appropriate mechanisms for disseminating results,
- ii) inadequate funding for research with just 1% of the university budget allocated to research well below the recommended minimum of 3% by a 20 year old document, the *Lagos Plan for Action*,

- iii) over reliance on foreign textbooks by faculty for instruction rather than internal research findings,
- iv) faculty lacking skills to effectively conduct research, and
- v) lack of motivation to conduct research by faculty (Makerere University 2006).

The policy is reacting to the above problems but also proactive in proposing forward looking strategies for developing a vibrant scholarly environment. As noted below, these strategies are the real drivers for the proposed policy.

4.5.2. Internal research, creativity and innovation as drivers

Overall the policy frames Makerere's research agenda as important to institutional and national development goals, for the latter, specifically aiming at creating awareness of and feeding into the 'national research agenda.' The policy also asserts that a vibrant research environment will enhance Makerere's international stature by encouraging “authors to publish their research products in internationally recognized publishing houses and outlets” (Makerere University 2006, 4). Research is to benefit individual researchers “through promotion, public and University recognition and the patenting of their output for commercial use” (Makerere University 2006, 3). Research in this case serves a dual purpose, propelling Makerere's international stature, on one hand, and rewarding researchers' creativity and innovation through job promotion and ownership of intellectual property (patents) from research endeavors, on the others. This dual purpose is the key driver behind Makerere's policy. As noted below, the intellectual property elements are elaborated upon in subsequent sections of chapter three of the policy document.

4.5.3. Key copyright (IPR) provisions

Management of intellectual assets and property is central to Makerere's research strategies. Through management of IPR, Makerere hopes to:

- i) Achieving the University's vision of “providing research and service relevant to sustainable development needs of society,”
- ii) Commercialize public research for the public good,
- iii) Beefing up Makerere's human resource needs by drawing from IPR proceedings,
- iv) Building and strengthening link with the private and industrial sectors to the benefit of the general public, and
- v) Promoting economic growth through research innovations (Makerere University 2006, 13).

Intellectual assets are defined as items where university personnel have:

- i) Put their ideas;
- ii) Taken particular decisions in respect of different choices;
- iii) Thought of ways to solve particular problems, etc (Makerere University 2006, 13).

In that context, the policy explicitly identifies research findings as intellectual assets which when “protected under the relevant laws would be transformed into intellectual property” (Makerere University 2006, 14). 'Copyright issues' is one of the intellectual assets to be transformed into intellectual property. In addition, research reports submitted and accepted for the award of degrees and diplomas are intellectual assets to be protected as intellectual property through relevant national laws.

This covers student dissertations and theses whose protection is subject of Uganda's Copyright and Neighboring Rights Act 2006. Reference to 'relevant national laws' is of significant importance in defining Makerere's position on copyright and intellectual property in general. This is further discussed below.

Although narrowly refers to 'patents' and patenting, the clause on 'Ownership of Innovations/Inventions' in the draft policy has far reaching implications for not only patentable products and services but also copyright and access to Makerere's internally generated knowledge. Subsection 3.13.4 and 3.13.5, reproduced below, are instructive on ownership of intellectual assets and property arising out of research activities at Makerere:

3.13.4 Any discovery or invention that satisfied the following circumstances shall belong to the University (hereinafter referred to as: *University Inventions*):

- (a) results from research carried on by, or under the direction of any employee of the University which is supported by University funds or funds controlled or administered by the University, or
- (b) results from an employee's duties with the University, or
- (c) has been developed in whole or in part through the utilization of University resources or facilities not available to the general public.

3.13.5 Any discovery or invention arising from joint collaboration between the University or its employees and other institutions shall proportionately belong to the parties.

Notwithstanding reference to relevant national laws as the source for legal interpretation, the above subsections, read in whole, potentially brings all research conducted at Makerere under ownership of the institution. Subsection 3.13.4 (a) and (c) are broadly crafted to bring students' research output under Makerere's owned property. With Makerere's utilitarian approach, this has serious implications for access to knowledge generated at Makerere and directions other institutions are to take on copyright and research.

4.5.4. *Identifiable 'grey' area and implications of Makerere's draft policy*

Makerere's policy clearly draws from national intellectual property (IP) laws but also sets forth specific positions the institutions has taken on intellectual property. First Makerere perceives IP as an economic resource with a public good, if exploited will further the institution's education and research services to the public. This utilitarian approach to IP comes as no surprise in an environment where economic interests trump the public goods and academic institutions are increasingly taking on corporate cultures and practices. Here I don't offer a detailed critique and assessment of the policy document but only highlight some 'grey' areas. Critique of the policy is will be done in a separate paper where the study findings will be considered in policy terms.

Makerere's draft policy is generally silent on outside knowledge resources yet these are critical to the research agenda Makerere aspires to build. Resources in question are both print and digital, the later being the focus of this study. A visionary policy document would address these resources and specify what resources researchers and scholars can use, under what terms. In a world where commercial databases have been introduced into a context where copyright is relatively new, as noted in Uganda's copyright history, the likelihood of litigation arising out of 'improper' use of such materials cannot be

mere speculations. Evidence from the photocopying enterprises should serve to support that conclusion.

Makerere is a fairly old institution where many have studied and conducted research and whose work is deposited with the University Library. The Policy makes no reference to retrospective treatment of knowledge products created before this policy. Makerere assuming ownership over works by alumni whose terms of admission and award were different from the terms set forth by the draft policy presents moral and possible legal.

Makerere's draft policy is a fairly ambitious document but one likely to tilt the balance away from the knowledge commons in Uganda and Africa in general. Whereas the policy document mentions transfer of intellectual assets to the public and private sector, it's clear from the specific sections highlighted above that economic interests override open values whereby Makerere's research output is directed towards income generation at the expense of wide dissemination and further knowledge generation. In a context of resource-poor institutions, the likelihood of other institutions borrowing a leaf from Makerere's is most realistic prediction at the moment.

Further analysis of this document will be done elsewhere, the foregoing discussion serves to show where some education and research institutions are heading on copyright and access to knowledge. A follow up will be made to better understand Makerere's process in developing this document and possible repercussions in terms of policy options for other institutions.

In light of the Makerere's draft policy document and other findings discussed earlier, the question shouldn't be whether institutions need policies or guides on vital questions like copyright and access to content for education and research. Rather the issue is what directions institutions need to take and articulate through these policies.

5.0. Conclusions and recommendations

A detailed discussion of the findings is left out in preference of policy recommendations as the concluding remarks. By way of conclusion, I revisit the three central research questions that were posed and examined in this study:

- i) How does copyright mediate to hinder or promote access to electronic knowledge in Uganda's education and research settings?
- ii) How does copyright distort representation of Africa's scholarship in the global knowledge flows through electronic database (revised to Internet in general)?
- iii) How should Africa's educational and research institutions leverage internal copyright practices and knowledge to formulate institutional policies but also participate and influence national and international information policy spaces and dialogs?

In a qualitative study, research questions serve to guide the scope and depth of the study rather seeking specific answers to draw inferences. However, here I attempt at responding to the questions posed.

The question of whether copyright hinders, or promotes, access attracted interesting responses as noted

earlier. Students generally associated economic barriers to copyright and this was the ground for constructing copyright in education and research as inappropriate. Africa's socio-cultural factors were another reason copyright was found as repugnant to knowledge access. It was not exactly clear how copyright intervenes in the distribution of knowledge goods and services in education and research contexts. But frequent mention of copyright and cost-associated access mechanisms like subscription-based access suggests that copyright is an important factor in determining access to educational content in the digital environment. Indeed we make a plausible conclusion that use of search engines is not merely a means to access resources easily but those that are not locked behind technological measures.

Copyright was not nearly associated with representation of African knowledge. Representation is possibly a copyright question but more pressing are issues like ICTs, internal peer review mechanisms, openness by researchers, and availability of resources to enable faculty and researchers carryout research and publish that work either locally and/or internationally. The appropriate question, therefore, should have been does copyright impact representation of African content?

The third question is of great important in the sense that regardless of how the first two questions were answered by the study, institutions need policies on research and intellectual property or broadly access to knowledge. On account of the analysis of the data collected for this study and the problem areas identified such as the mismatch between copyright and the "African Situation," a policy of no policy on access to e-resources and representation of the African content in e-environment is probably not a good policy. If anything, the thematic areas emerging out of the data are early indications for the need of institutional policies to address problems areas identified and other related matters. Instructive as Makerere's draft policy is, greater consultation internally and externally might reveal preference for more openness-oriented policies and guidelines in Africa's research and education environments.

This being a qualitative study whose findings are context specific, the above statement and policy recommendations in general can only apply in situations of shared or similar contexts. A detailed policy document will be prepared in light of the study findings to expand the thematic areas and policy options around them that permit openness and wider sharing of content whether generated locally or coming to institutions through the digital infrastructure.

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