PROSPECTS FOR OPEN LICENSING OF KNOWLEDGE MATERIALS IN ETHIOPIA

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ABSTRACT
Ethiopia, one of the world's poorest countries, has in the past two decades made significant strides in national educational attainment. However, the country's educational policy objectives still face numerous barriers. In this piece the author argues that a key challenge for Ethiopia's education system is access to knowledge (A2K), specifically access to copyright-protected scholarly and learning materials. The author proposes increased use of open-licensed materials, such as those licensed under the Creative Commons (CC) suite of licensing tools, which take a flexible approach to copyright in order to allow users to, inter alia, engage in permission-free copying and re-distribution of the works. Greater use of such open materials would, the author contends, produce cost savings for the Ethiopian government, allowing the state to increase its investments in other key components of the educational system such as facilities, Internet connectivity and teacher training and support.

KEYWORDS
Ethiopia, poverty reduction, education, access to knowledge (A2K), copyright, open licensing, open access (OA), open educational resources (OER), Creative Commons (CC)

INTRODUCTION: ETHIOPIA'S ACCESS TO KNOWLEDGE CHALLENGES
Since the early 1990s, Ethiopia has waged an ambitious campaign to expand its learning institutions nationwide. Driven by the objectives of its 1994 Education and Training Policy (FDRE, 1994), the country has been able to increase the enrolment numbers of its citizens at all levels of education (UNDP, 2012). At the higher education level, the state has increased the number of public universities from two in 1991 to 32 in 2013 (MoE, n.d.; UNDP, 2015). But despite the successes of the past two decades, the educational system still faces many difficulties. The focus of this article is on one particular challenge: access to knowledge (A2K). At primary and secondary school levels, A2K is undermined by a range of factors, including inadequate facilities, lack of Internet connectivity, and shortages of learning materials (see World Bank, 2015). At tertiary level, the A2K deficit has an added dimension: inadequate levels of participation by Ethiopian academics and researchers in online scholarly collaboration and sharing of findings.

Ethiopia's A2K challenges, intertwined with the country's high levels of poverty, are already being addressed on several fronts – by the Ethiopian government, donors and NGO programmes – in support of, inter alia, better facilities, improved Internet connectivity, and more electronic and hard-copy learning materials (see, for example, Roots Ethiopia (n.d.); World Bank, 2015). But one of the A2K strategies that has gained a great deal of momentum elsewhere in the world – reduction of copyright barriers through open licensing of scholarly and learning materials – is only just beginning to take hold in the country.

In the next section, I establish the importance of education (of which A2K is a key enabler) to poverty alleviation, and vice versa, in developing countries such as Ethiopia. I then provide an outline of the potential barriers to learning materials access in Ethiopia, including barriers connected to copyright, and look at how open licensing approaches such as Creative Commons (CC) have emerged as an attempt to minimise copyright's negative impacts on access to, and use of, knowledge goods. The fourth section looks at the current state of open licensing in Ethiopia, and the final section proposes a way forward.

ADDRESSING EDUCATION AND POVERTY
Poverty is not only the absence of financial resources; it is also the lack of capability to fully function in a society. Poverty has been defined as "a condition that results in an absence of the freedom to choose arising from a lack of the capability to function effectively in a society" (Omoniyi, 2013). This definition resonates with Sen's (1999) "capability approach" to evaluation of human well-being. To date, despite the anti-poverty measures implemented in different countries and through global initiatives, poverty is still prevalent in many parts of the world, including much of sub-Saharan Africa. Ethiopia's latest UN Human Development Index (HDI) ranking was 173rd out of 186 countries, putting it among the group of 43 "low human development" countries, the majority of which are in sub-Saharan Africa (UNDP, 2015). According to the World Bank's latest estimate, 29.6% of Ethiopians live below the poverty line (World Bank, 2014). The World Bank's current statistical definition of poverty is individual income of USD1.25 or less per day (World Bank, n.d.).

The quality provision of education, at all levels, is essential in the process of poverty alleviation and achieving overall development. Poverty and education are intertwined. Poverty acts as a factor preventing people from accessing education, by handicapping, inter alia, school attendance and the acquisition of learning and other pedagogic materials. At the same time, lack of education minimises people's ability to escape poverty. Investment in education increases the skill and productivity of poor households, which in turn enhances the wage levels as well as the overall welfare of the population (Maiyo et al., 2009). Looked at from the perspective of national economic development, the more the population in a given country is educated, the better the performance and competitiveness of its labour force and of the country in general (Omoniyi, 2013). Thus access to quality education at all levels is essential in the process of transforming societies and economies in developing countries.

This role of education in national development is affirmed in Ethiopia's Education and Training Policy of 1994, which calls for expansion of quality, equitable and relevant education and training (FDRE, 1994). The chief stated goal of the Policy is the cultivation of citizens with an all-round education who are capable of playing a conscious and active role in the economic, social, and political life of the country at various levels. Accordingly, the Policy calls for strengthening of "the individual's and society's problem-solving capacity, ability and culture starting from basic education and at all levels" (FDRE, 1994, p. 1). To achieve the goals of the Policy, it is imperative that the fundamental problems of the educational system are addressed stage by stage. Various strategies and methods have been devised to implement the Policy, including, inter alia, changes to curriculum, improved provision of educational materials and equipment, and improvement in the quality and quantity of teacher training (MoE, 2002).

The country has made significant progress in providing universal access to primary education (UNDP, 2012). For instance, the net enrolment ratio (NER) in the lower primary school cycle (Grades 1 to 4) increased from 77.5% in 2004-05 to 92.2% in 2011-12, and in the upper cycle of primary education (Grades 5 to 8), the NER rose from 37.6% to 48.1% during the same period (UNDP, 2012). However, the country's education sector still faces many obstacles.

A2K, COPYRIGHT AND OPEN LICENSING

Access to high-quality and relevant teaching and learning materials – a key element of A2K – is undermined by many resource-related obstacles. In poor countries such as Ethiopia, access is often denied by failure, at both household and government levels, to generate the economic means to acquire necessary materials. This element of A2K can also be hampered by policy and legal frameworks, including copyright laws and regulations. Recent research has revealed the potentially negative access dynamics engendered by copyright environments in African countries (Armstrong et al., 2010).

Copyright provides exclusive rights to creators (or rights-holders, e.g., publishers, who have acquired the rights from creators) over original literary and artistic works. Among these, the rights to control how a work is produced, distributed, copied and used are crucial in the light of access to educational materials. The theory behind copyright law is that it allows creators to benefit economically, for a limited period, from the works they produce, thus helping them achieve compensation and incentivising them to generate more works. But at the same time, copyright regimes provide an access dimension, via limitations and exceptions allowing certain permission-free uses of protected works for public interest purposes, including educational purposes.

This second element of copyright law, the access element, has been sidelined by emphasis on protecting the interests of rights-holders, despite the significant impact a lack of access may have on socio-economic development, particularly in low-income countries such as Ethiopia. Internationalisation of strong copyright protection via multilateral and bilateral agreements, via measures (e.g., digital rights management (DRM) technologies) put in place by private entities such as publishers, via introduction of anti-circumvention laws, and via state-supported stringent enforcement mechanisms, have weakened elements of copyright limitations and exceptions, making access to certain copyrighted materials increasingly difficult in the digital era. However, at the same time the digital revolution also carries the potential to make A2K easier. The Internet and related information and communication technologies (ICTs) provide powerful platforms with the potential to greatly expand A2K in both the developed and developing worlds.

Seeking to mitigate the access challenges created by current copyright regimes and, at the same time, to harness the potential offered by ICT platforms, open licensing movements have emerged. These movements aim to improve access to, and use of, works under copyright, including access and use for public interest purposes such as education. A key open licensing system is the Creative Commons (CC) suite of flexible copyright licences.

The Creative Commons movement is based on the assumption that societies grow, cultures develop and innovation exists through sharing (Creative Commons, 2014). Use of CC licences allows creators (i.e., copyright-holders) to share their materials more freely while still retaining some of the rights granted by copyright laws. By applying one of the CC licences to a work, a creator (or publisher or whoever the rights-holder is) is able to allow users to perform one or more of several possible uses on a permission-free basis. These uses include: copying and re-distribution of the work (provided the rights-holder is attributed); and adaptation of the work (provided the rights-holder is attributed) (Creative Commons, n.d.). CC licences also allow the licensor to specify whether the work can be used for commercial gain and whether adapted versions of the work must be distributed on a "share alike" basis (i.e., under the same CC licence) (Creative Commons, n.d.). In 2014, there were 882 million online works carrying a CC licence (Creative Commons, 2014).

OPEN LICENSING IN ETHIOPIA

COPYRIGHT LAW
The Copyright and Neighbouring Rights Protection Proclamation No. 410/2004 (Proclamation No. 410/2004) governs the protection of copyrightable works in Ethiopia (FDRE, 2004). The Proclamation recognises the vital role that literary, artistic, scientific and similar works have in enhancing the development of the country (FDRE, 2004). As with copyright statutes elsewhere in the world, Proclamation No. 410/2004 provides bundles of economic and moral rights to creators of works falling under its scope of application. The law is applicable to: works by Ethiopian nationals or those who have their principal residence in Ethiopia; works published in Ethiopia; and works published abroad and then published in Ethiopia within 30 days. The specific scope of application of the Proclamation can be found in its Article 3. (As Ethiopia is not a signatory to relevant international copyright agreements such as the WIPO Berne Convention and the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the Proclamation's Article 3 is the key to determining what is protected in Ethiopia.)

As is typically the case in a national copyright regime, economic rights granted under Ethiopian copyright law – including the rights to copy, adapt, translate and commercially exploit (e.g., exhibit, rent, sell) – can be carried out by the creator and/or licensed or assigned to another party (in accordance with the stipulations of Article 23 of Proclamation No. 410/2004). The term of copyright protection for most of these economic rights is 50 years from the time of death of the work's author. According to Article 23(2) of Proclamation No. 410/2004, any licensing of a work by a copyright-holder "shall be made in writing". How the relevant court in Ethiopia would interpret this requirement of "in writing" – a requirement typically associated with signed documents – is a point to consider in relation to use of CC licensing in the country, i.e., a question arises: would the modalities of online CC licensing, which consist of applying the licence through use of an online notice and not via a signed document, suffice in the Ethiopian context? In my view, this question can be answered in the affirmative, i.e., it can be presumed that CC licences have the capacity to be enforceable under Proclamation No. 410/2004, as long as both parties are informed of the terms and conditions. But it is not possible to make a firm determination on this matter based on existing decisions of the relevant Ethiopian court.

Another provision of Proclamation No. 410/2004 relevant to the applicability of CC licences in Ethiopia is the provision in article 24(3) that

> [w]here an agreement for the assignment or licensing of specific economic right fails to specify the time for which the assignment or license shall operate, the assignment or license shall terminate after 10 or 5 years respectively. (Art. 24(3), FDRE, 2004)

CC licences do not specify duration, and thus some might argue that the effect of Article 24(3) is that the maximum duration of a CC licence in Ethiopia would be five years. However, if one takes the CC BY (Attribution) licence as an example, the licence states that it "applies for the term of the Copyright and Similar Rights licensed here" (Creative Commons, n.d.). Thus, it can be presumed that the rights assigned by a CC licence would be valid for the full 50 years from the time of death of the author as specified in the Ethiopian Copyright Proclamation.

OPEN ACCESS (OA) SCHOLARLY WORKS AND OPEN EDUCATIONAL RESOURCES (OER)
The local CC chapter was established in 2014 (Creative Commons Ethiopia, n.d.), but open licensing movements are at present only in their infancy in Ethiopia.

I now turn to an examination of two key types of open-licensed materials: (1) open access (OA) scholarly works; and (2) open educational resources (OER).

OA
OA distribution of resources, often under CC licences, aims to ensure global dissemination of scholarly outputs from universities and other research-focused bodies. A great deal of OA distribution occurs via online CC-licensed academic journals, and via online repositories of university theses and dissertations.

At the time of writing in mid-2015, there were several Ethiopian OA academic journals listed on the African Journals Online (AJOL) platform, including the *Bulletin of the Chemical Society of Ethiopia, Ethiopian Journal of Education and Sciences, Ethiopian Journal of Environmental Studies and Management, Ethiopian Journal of Health Development, Ethiopian Journal of Health Sciences, Ethiopian Journal of Science and Technology, Ethiopian Veterinary Journal, Journal of Business and Administrative Studies, Mizan Law Review* and *Momona Ethiopian Journal of Science* (AJOL, n.d.).

However, there were only two Ethiopian OA repositories listed in the global Directory of Open Access Repositories (OpenDOAR, n.d.): the Addis Ababa University Libraries Electronic Thesis and Dissertations Database (AAU-ETD) and the Horn of Africa Regional Environment Centre and Network repository. It is thus clear that Ethiopian university take-up of OA publishing is still only at a very early stage. Greater use of OA will help, inter alia, the country's researchers and scholars to increase their participation in international, online "open science" collaborations.

OER
OER distribution, also typically under CC licences, aims to make learning materials widely available online so that schools, teachers and learners do not need to invest significant resources in accessing and using such materials. The materials, which typically can be adapted on a permission-free basis by educators as well as freely copied and re-distributed, are becoming a key form of educational content in the developing world, including many African nations. However, at present, there is very little emphasis on OER in Ethiopia, as evidenced by the low volume of Ethiopian content presently on the OER Africa platform (OER Africa, n.d.).

OERs can significantly diminish a country's spending on the provision of educational materials. The monies saved can then be used, inter alia, to improve facilities, to increase ICT infrastructure and Internet access, and to train teachers. There is already a wide range of English-language OER materials available online that would be of potential use in Ethiopia, because English is the medium of instruction at secondary and tertiary education levels. For use of OER at primary level, where Ethiopian indigenous languages (such as the official working language of the federal government, Amharic) are the languages of instruction, there would need to be investment in creating new OER resources in such languages, e.g. via translation of English-language materials.

WAY FORWARD

For open licensing of copyright materials to gain more momentum in Ethiopia, the following are two possible elements of the way forward:

OFFLINE OER

If OER is to gain a strong presence in Ethiopia, consideration needs to be given to providing not only *online*, but also *offline*, access to OER materials. Since its inception, the global focus of CC licensing has been online application of its licences. However, this online emphasis potentially loses some of its efficacy in countries such as Ethiopia where Internet penetration is still very low. Ethiopia's Internet penetration sits at approximately 4.5% to 5% of the population (MCIT, 2012), among the lowest levels on the African continent and the world. (Ethiopia's population is roughly 95 million people, meaning the country is home to tens of millions of people who do not use the Internet.).

Where Internet penetration is weak, emphasis can be placed on offline use of resources carrying CC or other open licences, i.e., open-licensed educational resources can be made available in paper format, or in digital form on computers and other ICT devices not connected to the Internet, at libraries and other communal facilities. Here, the experience of a non-profit project called New Education Highway (NEH) in Asia is notable (NEH, 2015). In Myanmar, NEH focuses on giving access to quality educational materials to remote and rural communities that have no or limited Internet connectivity (Park, 2013). Via community partnerships, and combined with teacher training and provision of sample teaching materials to accompany the learning materials, NEH makes CC-licensed OER materials available on an offline basis, in collaboration with governmental and non-governmental entities (NEH, 2015).

THE "PAN-AFRICAN OPEN MOVEMENT"

Linkages need to be forged been Ethiopian open licence proponents and the open licensing initiatives already active elsewhere on the African continent. A positive step in this direction occurred in 2014, the same year that the Creative Commons Ethiopia chapter was launched, when an Ethiopian delegate was present in Cape Town for the first phase of the #OpenAfrica14 training initiative, which sought to build a "pan-African Open Movement community" (WikiAfrica, n.d.2). Ethiopia was subsequently chosen as the first stop for the Kumusha Bus initiative, which brings together national groupings of open source and open content practitioners. In June 2014, the Kumusha Bus convened Ethiopian representatives of Wikimedia, Creative Commons, the Computer Science 4 High School Students project, Sheger Media, AIESEC and Addis Ababa University in the Ethiopian capital Addis Ababa for four days of activities aimed at generating "interest and participation in Africa's growing Open Movement" (WikiAfrica, n.d.1). Some of the participants in this Addis Kumusha Bus event then went on to launch Project Luwi, which "intends to create a local community of interested volunteers […] able to foster motivation and creativity around Open Educational Resources (OERs) and [support] a culture of sharing information freely in Ethiopia" (Project Luwi, n.d.).

These are the types of linkages and initiatives that can help to bring Ethiopia more into the mainstream of open licensing in Africa and, in turn, improve the country's efforts to combat poverty through improved educational attainment.

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