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The roles of library and information services in achieving Sustainable Development Goals (SDGs) in Uganda

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Abstract
The world is currently faced with various challenges which have become a major drawback in achieving sustainable development across the developing world. One way to address these challenges is to ensure that countries work towards achieving the United Nations' Sustainable Development Goals (SDGs), which require a number of stakeholders to intervene if these challenges must be reduced for the benefit of humanity, and one such stakeholder is the library and information sector. This paper uses insights from the Development and Access to Information (DA2I) framework to thematically examine and synthesize the contribution of library and information services in achieving SDGs through exploring their contributions to the various economic and social transformation drivers based on Uganda's Vision 2040. Data were collected by review of online peer-reviewed and grey literature published between the year 2001 and 2018. It is observed that effective and sustainable management of library and information services will be central to the attainment of all the SDGs as reflected in the Uganda's Vision 2040. The government of Uganda therefore needs to provide the needed status for this sector and put it on its agenda to usher a new spirit of library and information services professionalism that will go a long way to enhance literacy and enlightenment that is needed if Uganda is to achieve the SDGs as reflected in its Vision 2040 plan.

Keywords
Library and information services, Roles of information, Socio-economic development, SDGs, Uganda Vision 2040

Introduction

The success of any country or society rests squarely on the adequacy of its library and information services collections because library and information centers act as agencies for findings, discovery, innovation, vocational skills repository, scholarship and research (Mkumbo, 2016). Information is now regarded as one of the most fundamental rights and requirement for personal and social development, and for citizens' participation in effective governance (Habermas, 1989 as cited in Britz, 2004). Access to information is a key enabling factor for governments to deliver quality and inclusive services to its people (Ashwill and Norton, 2015). Effective library and information services enhance socio-economic development by creation of a knowledge society and empowering people, especially marginalised people and those living in poverty to exercise their rights, be economically active, learn new skills, enrich cultural identity and take part in decision making (Internation Federation for Libraries Association (IFLA), 2013b); and the services are usually supported by the necessary infrastructure, information and communication technology (ICT) and media and information literacy capabilities that people need to effectively use information and preserve them. The term library and information services are used here to refer to activities and services that are undertaken by public, school, academic and special libraries to manage information resources to ensure access to information and knowledge, provide information literacy skills, ensure lifelong learning, and carry out research and learning development of individuals and the society (Garrido and Fellows, 2017).

According to Abata-Ebire (2018), libraries play an important role in achieving Sustainable Development Goals (SDGs) as it is globally considered a center of research and knowledge generation to empower people and address human challenges. The United Nations 2030 SDGs agenda is an inclusive, integrated framework of 17 goals with a total of 169 targets spanning economic, environmental and social development across the globe (United Nations, 2015). They goals lay out a plan for all countries to actively engage in making the world a better place for people and the planet, and is expected to help member states focus their attention on poverty eradication, climate change, and the development of people. By achieving this agenda, all countries across the globe are expected to have lifted their society out of poverty. Bradley (2016) points out that libraries have an essential role in helping to meet the grand challenge of SDGs by providing access to information, public access to ICT, helping people to develop the capacity to effectively use information, and by preserving information to ensure ongoing access for future generations. Ashwill and Norton (2015) note that access to information is a key enabling right for governments to deliver quality, inclusive services to its people as set out in the SDGs.

One recurring theme in the fight against poverty in Uganda is the concept of chronic poverty. According to the World Bank (2018), up to 74% of the people living in the Northern and Eastern parts of Uganda are living below the national poverty line and are considered to be suffering from chronic poverty. This is significant if we consider that 60% of the population in Uganda are engaged in subsistence agriculture with women providing almost 76% of the total agricultural labour in Uganda (Food and Agriculture Organization (FAO), 2018). People in chronic poverty are often those who are faced with a host of interlocking problems, have benefited least from economic growth and development, and with few opportunities for accumulation of wealth and escape of poverty. These host of "interlocking problems" may include disability, ill health, abandonment, household

break-up, alcohol abuse, theft, few livelihood options, polygamy, remoteness/isolation, and few assets (World Bank, 2016). To address these challenges, IFLA (2018) recognizes the contribution of library and information services to improve outcomes across SDGs. From promoting literacy, to offering free access to information; libraries are safe, welcoming spaces at the heart of communities with a dedicated team who have a deep understanding of local needs; are able to advance digital inclusion through use of ICT; and promote innovation, creativity and access to the world's knowledge for current and future generations (IFLA, 2018).

In the move from the Millennium Development Goals (MDGs) to the more promising SDGs as reflected in Uganda Vision 2040, the contribution of library and information services to Uganda's development paths cannot be underestimated. Uganda Vision 2040 is a localized national planning frameworks of the 2030 SDGs that refocus Uganda's development agenda, address the bottlenecks that hamper development and incorporate best human development practices from other countries in the world with the aim of accelerating national efforts towards achieving a middle income status, while pursuing sustainable and inclusive development within the framework (NPA, 2016). The framework builds on the progress that has been made in addressing the strategic bottlenecks that have constrained Uganda's socio-economic development since her independence, including ideological disorientation, weak private sector, underdeveloped human resources, inadequate infrastructure, small market, lack of industrialization, underdeveloped services sector, underdevelopment of agriculture, and poor democracy, among others (National Planning Authority (NPA), 2007). Addressing these constraints will only be possible through transformation of Uganda into an information society where library and information services are considered as key actors in providing unhindered access to information and knowledge to advance socio-economic and cultural advancement and to develop and effectively utilize information systems and services in the development of the country (NPA, 2007).

The purpose of this paper is to examine the roles that library and information services can play in achieving SDGs as reflected in Uganda Vision 2040. To achieve this, the paper begins with a review of relevant related literature. This is followed by an outline of the methodology that was used to carry out the study. The results of the study are then presented and discussed. Finally, a concluding remark is then made. It is hoped that the demonstration of the importance of library and information services in achieving SDGs as reflected in Uganda Vision 2040 is critical in providing useful evidence across studies to determine overall roles of library and information services in achieving SDGs to inform policy development. In addition, highlighting these roles should provide the necessary indicators so that the library sector is put in the socio-economic development agenda of the government of Uganda as one of the contributors for achieving SDGs as reflected in its Vision 2040 plan.

Literature review

According to Rowley (2006), the vision for library and information services for the twenty-first century is in the significant contribution that they can make in an information and knowledge-based society through promoting democracy, inclusiveness, public information, lifelong learning, knowledge creation, innovation, economic growth and business success. For example, in the United Kingdom, the following key themes have

been identified as strategic for public libraries: capacity to deliver transformation through innovative and effective management; books, reading and learning; digital citizenship; and community and civic values (Department for Culture, Media and Sport, 2003). Opeke (2004) states that information is widely accepted as the essential feature of production, consumption, and exchange and that information empowers all citizens. Furthermore, information is needed for empowerment and decision making, and is necessary for development in rural communities (Unagha and Ibenne, 2011). Seneviratne (2007) suggests that rural communities need information for living and for participation in social activities for rural development.

Harande (2009) notes that any serious, active, conscious, and sensitive government would not neglect rural communities in terms of provision of information and that there is a significant relationship between slow or no development in African countries and neglect of the rural areas in terms of library and information services. As early as 1985, Alegbeleye and Aina state that third world countries had come to realize that little meaningful development would take place unless the rural areas were provided with adequate and timely information. More recently, Harande (2009) observes that there are still inadequate information services in rural areas in Africa and that very few of these countries have devoted attention to providing their citizens with access to information, especially in rural areas. Bebber (2017) characterises information as a strategic resource along with human, financial and natural resources while Onu (2005) refers to information "as the oil that greases the wheel of governance programme and the activities of government and individuals". Idiegbeyan-ose and Akpoghome (2009) enumerate the five factors of production as: land, labour, capital, entrepreneurship, and information and they further stress that for meaningful development to take place anywhere, adequate information must be provided.

Around the world, access to opportunity begins with public access to information and knowledge because information enables people to make informed decisions that can improve their lives. Communities that have access to timely and relevant information for all are better positioned to eradicate poverty and inequality, improve agriculture, provide quality education, and support people's health, culture, research, innovation and eradicate poverty as some of the agenda for achieving SDGs (IFLA, 2018). The SDGs build on the previous millennium development goals in areas of critical importance for human development and consists of 17 key goals that include achieving: no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequality; sustainable cities and communities; responsible consumption; protect the planet; life below water; life on land; peace and justice; and partnership for the goals (United Nations, 2015). IFLA (2018) highlights a wide range of library and information products and services that can be provided to improve outcomes across the SDGs including promoting universal literacy; closing gaps in access to information; providing a network of information delivery sites for government programs and services; advancing digital inclusion through access to ICTs; and preserving and providing access to the world's culture and heritage.

According to the NPA (2007), Uganda Vision 2040 sets out the goals and targets to be achieved to realize the desired socio-economic transformation of country. The plan seeks to transform Uganda from a peasant to a modern and prosperous country within 30 years through addressing key socio-economic transformation bottlenecks including low

competitiveness, low industrialization, democracy and governance issues, low investment, inadequate infrastructure, and poor saving culture. To achieve the vision, the plan outlines specific interventions to be undertaken including operationalization of E-government services to improve responsiveness and reduce corruption; computerization of information systems and services to increase administrative efficiency; promoting result-based management and accountability; and encouraging public access to information and data (NPA, 2007). Bradley (2014) elaborates that a well-informed society contributes significantly to eradication of poverty and the development of the nation as the availability and access to information resources and services would promote peaceful and inclusive societies for sustainable development; provide access to justice for all; and build effective, accountable and inclusive institutions at all levels.

Theoretical Framework

Access to information is not an end in itself, but rather a driver of progress across the different facets of life across the globe. It empowers people and communities, laying the foundations for equality, sustainability, and prosperity. This paper uses insight from the DA2I framework (Garrido and Fellows, 2017) to assess and elaborate on the contribution of library and information services in achieving the SDGs in Uganda as reflected in Uganda Vision 2040. The DA2I frameworks (Garrido and Fellows, 2017) describe four interdependent dimensions that influence access to and utilization of information for the achievement of SDGs and these include *"ICT infrastructure"* which refers to ICT that facilitate connectivity to information; *"social context of use"* which refers to the variety of local and cultural factors that shape the way users will engage with information; *"capabilities"* which refers to the body of functional knowledge, skills, and resources that shapes the nature of how information is used or not used; and *"the legal and policy landscape"* which refer to the policies and regulatory frameworks that promote or hinder information connectivity, affordability, inclusiveness, and rights. Informed by this framework, the literature was thematically synthesized according to Uganda's social transformation drivers as outlined in the Uganda Vision 2040 document (NPA, 2007) and these drivers include population; agriculture and nutrition; education; healthcare and protection of the vulnerable; ICT; democracy and human rights; housing development; national culture; gender equality and women empowerment; environment and natural resources; climate change; and science, technology and innovations.

Study method

The methodological approach for this study involved literature review of both peer-reviewed and grey literature published from the year 2001 to 2019. A literature review is a systematic way of collecting and synthesizing previous research (Tranfield et al., 2003). An effective and well conducted literature review as a research method creates a firm foundation for advancing knowledge and facilitating theory development (Webster and Watson, 2002) by combining information from multiple existing studies to have better knowledge of the overall effect sizes, which makes it widely used in many research areas. The method was chosen for this study specifically because it is useful for combining evidence across studies to determine an overall effect that can be very useful in informing policy (Davis et al., 2104). In this paper, online information sources were utilized together

with published and grey literature using the search filters "library and information services and SDGs" and "library and information services and Uganda Vision 2040 drivers" as outlined above under "theoretical framework".

Results and discussions

Results from the synthesis are presented and discussed in the following sub-section.

Population
To emerge into a middle-income economy in the coming decades, Uganda will have to take into account population factors such as *capabilities* based on functional knowledge, skills and resources that shapes the nature of how information is used or not used as part of the development equation according to Uganda Vision, 2040 (NPA, 2007). Uganda's population is its biggest and one of the most important resources which with the right *capabilities* must be harnessed to facilitate faster socio-economic transformation. According to the United Nations (2014), the unmet need for contraception due to lack of a well-developed *information infrastructure* to provide the information that would contribute to reduction on the rate of population growth remains one of the biggest challenge in addressing high population growth especially among the most vulnerable in society: adolescents, the poor, those living in rural areas and urban slums, people living with HIV and internally displaced people. Philbin et al. (2019) note that libraries' extensive population reach, their access to diverse sectors of the population, the public trust they command, and their diverse geographic coverage favorably position them from the *social context of use* perspective as part of a multi-sectoral strategy to address population issues such as family planning, increasing dependence burden and unemployment. There are unrealized opportunities for public health researchers, healthcare workers, and policy makers to leverage this potential as part of a coordinated effort to mitigate population-based issues.

Musinguzi (2013) citing an Electronic Information for Libraries (EIFL) (2012) survey points out that there is a strong belief in Uganda that effective library and information services and the *capabilities* of users to utilize them across a wide spectrum of development issues including health, communication, social cohesion, agriculture, citizen's empowerment and e-government, poverty and employment; remain the only viable way to improve the quality of life of the population in Uganda. Besides its *social context of use*, the provision of effective library and information services to facilitate information exchange and sharing about family planning is a basic determinant of the quality of life of individuals and the general population (European Commission, 2013). Chukwuji et al. (2018) note that the information and knowledge of family planning does not only enable women and men to control their family size, but also guarantees citizens' health and rights, improves families quality of life, and is one of the most cost-effective ways to prevent maternal, infant, and child mortality.

Agriculture and nutrition
Over 70% percent of the agricultural labor force in Uganda is made up of women (FAO, 2018). If sustainable agriculture and SDGs are to be achieved, smallholders, especially women, and low-middle-income farmers must be able to access, analyze, and apply information to their production systems and develop the *capabilities* to make effective use

of library and information services. According to EIFL (2015), the 'Connect Uganda' Pilot Project launched in 2012 as a partnership between Maendeleo Foundation and the Uganda Community Libraries Association (UgCLA) worked through five rural libraries to help farming communities to improve their incomes. In less than a year of its operation, the project improved on human *capabilities* by training 700 farmers and others in the community to use computers for accessing agricultural information online, and it also translated agricultural information into local languages with the help from experts from Makerere University, Uganda. The project also helped farmers petition the government to supply them with disease-resistant coffee plants, to identify new species of trees, and to encourage youth to take up farming as a career.

Improving on human *capabilities* and developing *ICT infrastructure* with respect to information services can support agriculture and nutrition by facilitating research and development of relevant evidence based policies through collecting, organizing and providing access to relevant and timely information in the appropriate format (Rhoe et al., 2010). Library and information services can also act as sources of critical information on various topics of interest in agriculture and nutrition to support nutrition and agricultural extension services through translation, interpretation, repackaging and customization of information and knowledge to suit the needs of farmers or extension officers. Library spaces and premises can also be used to promote *capabilities* for learning, dialoguing and networking through community centers which should result in the effective sharing of knowledge, development of roadmaps, rallying of calls to action and building of alliances to support sustainable agricultural production, better marketing of agricultural and nutritional products and enhanced postharvest practices (Rhoe et al., 2010). EIFL (2014) notes that for teenagers living in rural communities in Africa, providing health reading and computer camps services increase knowledge about health and nutrition, and its practical application in personal hygiene, diet and agriculture.

Education
Library and information services are critical in the educational and competency development of a nation through their services and programs like introducing children to the habit and joy of reading, and aiding scholars and researchers in contributing their *capabilities* through research to promote development. The connection between rural libraries and small-scale economic development must begin with a closer look at the impact of these libraries on their communities in general. Much of the measurable impact demonstrated in *capabilities* (functional knowledge and skills) have to do with improved literacy practices, the provision of non-formal educational activities, and support of what is often a fledgling reading culture. Dent and Yannotta (2005) note that libraries have a real benefit to users in terms of developing *capabilities* through providing access to reading materials and literacy program, enhancing academic performance of students and promoting non-formal educational activities. These are demonstrated by the fact that students who use library and information services have measurably higher *capabilities* of functional knowledge, skills, and resources reflected in class rankings than their counterparts without access to a library and information services.

In a study on local economic development in Uganda and the connection to rural community libraries and literacy, Dent (2007) highlights three key roles that library and information services play in enhancing *capabilities* through acquisition of functional knowledge and skills in Uganda. These include: firstly, by promoting access to education

by teaching information skills and providing leadership and expertise in the use of ICT in libraries; secondly, by participating in networks that enhance access to resources outside the school or community; thirdly, by providing free and equal access to information and ideas across social, cultural, and economic barriers; and lastly, by assisting in lifelong learning and promoting functional literacy among adults so that they become responsible citizens. By supporting education and *capabilities* development, therefore, effective library and information services support human resource development by imparting business, entrepreneurial, technological and social skills which are all essential for achieving socioeconomic development.

Healthcare and protection of the vulnerable

Community and public libraries can particularly play a pivotal role from the *social context of use* in the provision of community health information services to address healthcare challenge in any society. Libraries provide the space, digital or physical information materials, information services and network which can be used to share health information and thus promote healthy living and avoidance of preventable illnesses. For example, in an impact assessment survey conducted in Uganda in 2012 by EIFL, findings showed that the number of library users seeking health information more than doubled after Hoima Public Library introduced its health service corner in the Public Library (EIFL, 2015). The survey found that 20% more mothers who used the Library had mosquito nets in their homes, and slept under them regularly. The Library provided free access to the internet in its e-health corner, and, from 2010-2012, working with the Red Cross and local hospitals, trained over 400 health workers, 2,000 students and 700 members of the general public to improve their *capabilities* in the use of the internet to access reliable health information. As a result of these services, the Library in 2012 won an EIFL Public Library Innovation Award for library services that contribute to community health (EIFL, 2015).

In this paper, vulnerable population refers to the groups and communities that are at a higher risk for poor health due to the inability to anticipate, cope with, resist and recover from the impacts of disasters (WHO, 2002). Solina et al. (2019) notes that modern public libraries strive for inclusivity and part of this effort involves enhancing staff capacity for engaging with socially vulnerable populations. According to EIFL (2015), to address the *social context of use* of library and information services for vulnerable groups and improve on their *capabilities*, Kitengesa Community Library in Uganda which was launched in 2012 has been playing a vital role in ending the isolation of deaf children, who for the first time were able to share space with regular library users, learning to use ICT, playing games, using Skype and taking extra English language classes. The library reaches out to Good Samaritan School for the Deaf, where over 100 boarding and day students have enrolled for primary education and vocational skills training. Until 2012, Good Samaritan School students were isolated from the community as few Ugandans know sign language, and even within their own families, deaf children may be regarded as mentally retarded. At that time, about 20 students from Good Samaritan School for the Deaf visited the library every week. To help overcome prejudice, the library also works with family members, schools and local institutions like hospitals and the police service. In 2013, the services provided by the Library won an EIFL Public Library Innovation Award for library services contributing to social inclusion in the community from the *social context of use* perspective (EIFL, 2015).

Information and Communication Technologies

A decade ago it was dubbed the 'digital divide'. Now, the gap in ICT between North and South is slowly shrinking. By gaining a toehold in affordable ICTs and developing *ICT infrastructure*, library and information services make it possible for the poor to use ICT to access information and knowledge services that they need, such as real-time market prices, to boost and improve on their *capabilities* to improve on their livelihoods. For example, In Uganda, the Maendeleo Foundation with a small grant (up to US$15,000) from EIFL's Public Library Innovation Programme (EIFLPLIP) in 2010, installed wi-fi internet connections and 15 netbook computers in five rural libraries serving communities in each of the four regions of Northern, Southern, Eastern and Western Uganda (EIFL, 2012). Working with the Uganda Community Libraries Association (UgCLA), the Makerere University Centres for Lifelong Learning, and the government farm support agencies and farmers' groups, the Foundation was able to launch a program for developing the *capabilities* of the communities through free ICT training for farmers, and the creation and packaging of information in local languages. Through the program, the Foundation was able to demonstrate the value of ICT in enhancing agricultural development by inspiring farmers' groups and library users to contribute to the cost of internet connections; helped farmers petition a government agricultural agency to supply them with disease-resistant coffee plants; enabled farmers to identify new species of trees that they can sell in the community; encouraged young people to take up farming as a career; and linked farmers to new sources of farm supplies and marketing opportunities (EIFL, 2012).

According to a policy document by the Government of Uganda, The Ministry of ICT was established in June 2006 with a mandate of promoting digital inclusion through bridging the digital divide that exist in providing access to online information resources across all sector (Ministry of ICT, 2014). This decision came up as a result of the realization by the government that in today's connected world, the *capabilities* and competence to access the internet affects everything from healthcare to quality education to job hunting (Carnegie Corporation of New York, 2019). Within these dynamics of operating in the digital world that the Ministry of ICT was set up to achieve, Petuchovaite (2019) points out that the roles of public library becomes critical beyond the value of managing print materials in their stacks to bridging the digital divides and supporting citizens who are stepping into the digital world. Libraries are now assuming new roles of building technology and digital literacy skills in their communities; providing access to e-resources and other online content, and integrating technology into innovative information services. In Uganda, for example, the examination of the different ICT policies that have been put in place show that the government recognize the potential that public libraries working in an environment of a developed *ICT infrastructure* can contribute in the socio-economic development of the country. These include bridging the digital divide and facilitating information access to all; operationalising e-government services and participating in online digital economy; implementing and promoting national digital literacy initiatives; providing access to e-learning and digitizing educational materials; and digitization and content creation in local languages (Carnegie Corporation of New York, 2019).

Democracy and human rights

Since their inception, libraries have played a unique role in societies - that of an impartial mediator, brokering information from those who dispense it to those who seek it (Anderson, 2013). Because of this, libraries are well-positioned to support the development of democracy in transitional states like Uganda. According to Anderson (2103), the three key elements that are essential to democratic governance looking at information from the *legal and policy landscape* include transparency, accessibility and accountability which have of late all been greatly enhanced through use of ICT in libraries. Coyle and Meier (2009) note that the anonymity which the use of ICT in libraries can offer, as well as the possibility for citizens to participate at a time and location of their convenience, make ICT tools and services in libraries attractive platforms for promoting transparency, accessibility and accountability in democracies across the globe. This is because digital technologies facilitate networking, advocacy, mobilization, service delivery, critical debate, voting, electoral monitoring, and freedom of expression. The spread of mobile phones, crowdsourcing technologies, and social networks have particularly enabled messages to be amplified, information flows to be accelerated, and new spaces to be opened up for the involvement of individuals and communities in ensuring effective democracy, rule of law and observation of human rights (Coyle and Meier, 2009). Okello-Obura and Kigongo-Bukenya (2011) further elaborate that a country like Uganda should looks at the development of *capabilities* broadly to manage *ICT tools and infrastructure* in libraries so as to contribute in promoting access to information for enhancing democratic governance, transparency, accountability, observance of human rights, freedom of association, and political consciousness among others, so as to transform the society.

Ensuring democracy and human rights are values shared by all societies because they are about recognising the value and dignity of all people based on the ideals of respect, fairness, justice and equality (Mnubi-Mchombu, 2013). To promote democracy and protect human rights, gaining knowledge of human rights issues through developing capabilities (civic education and creating awareness) is critical so that citizens are able to demand for their rights. According to Mnubi-Mchombi (2013), strong libraries and information centers can play an important role based on the *legal and policy landscape* in ensuring citizens know their rights, demand, and defend them through: provision of online and hard copies of the constitution in libraries for people to read to understand their rights; collaborating with civil society to disseminate information and create awareness on human rights; making available and publicizing the work of the Office of the Ombudsman or Anticorruption Commission; and stocking all international human right instruments that have been ratified across the globe. Nye (2017) notes that freedom of information and an individual's right to privacy are key components of personal growth, cultural understanding, and a peaceful world. This is because people who explore the world widely and question norms have the ability to explore and question commonly accepted beliefs, find new answers to challenges, and invent methods for improving life on earth; and librarians in democratic societies have important roles to play to make these possible by educating all users about intellectual freedom and ensuring free access to information (Nye, 2017).

Housing development

Under the *social context of use* of information, Nwokocha and Chimah (2016) explored and identified several information needs of individual rural communities in Africa. These included neighborhood information needs (water, electricity, sanitation, refuse disposal); health information needs (disease prevention, healthcare services, healthcare cost); agriculture and allied occupations information needs (seeds planting, soil conservation, plants and animal disease, fertilizer application, storage of farm products, marketing); education information needs (existing rural schools, needs of the illiterate's and semi illiterates, teaching and learning processes); employment and business information needs (employment opportunities, taxation, investment opportunities, banking); and lastly, housing information needs which include information on where the public can obtain loans to build houses, types of materials to be used, and where they can be easily obtained at cheaper rates. Social transformation entails access to information on the best ways to acquire decent shelter by the population in both rural and urban settings because housing is essential for the well-being of mankind and the conditions of the houses are important in improving the sanitation status of a household and could be a proxy indicator of the welfare status of a household (Varheim, 2014b).

IFLA (2014) predicted that by 2020, there would be a substantial increase in the number of cities and human settlements in urban areas, and library and information services based on their *social context of use* will play an increasing role in ensuring adoption and implementation of integrated policies and plans towards inclusion, resource efficiency, adaptation to climate change, and resilience to disasters to ensure holistic disaster risk management at all levels (United Nations, 2015). The development of resilience of communities is critical here because communities' existence are increasingly being put to the test because of vulnerabilities arising from climatic, environmental, economic, social and political change on a global scale. Community resilience is used here to refer to the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise (Magis (2010). Varheim (2014b) notes that public libraries are universalized local community institutions where every citizen is an eligible member disregarding all individual traits. They are therefore, perhaps in line with community resilience and based on their *social context of use*, among the most trusted of government services and public institutions, and are regarded as very safe places by all members of societies (Miller et al., 2013). In addition to their open character, public libraries have a physical presence in forms of buildings in most communities. Their physical and attitudinal footprint make libraries interesting institutions for developing community resilience through promotion of adaptable lifestyle in a changing environment.

National culture

Based on their *social context of use*, libraries, archives and museums are custodian of indigenous knowledge and cultural heritage - they hold drawings, paintings and other documentary artifacts, including manuscripts, records, books and audiovisual items (Abdulmumin, et al., 2012). Indigenous knowledge has gained wider acceptance in the present global society in relations to their *capabilities* to advance knowledge and this has generated a lot of concern on the need to preserve and conserve it for the benefit of future generations. As a result, different initiatives have been launched by both government and non-governmental organizations toward collection, preservation and dissemination of

indigenous knowledge. IFLA (2004) in its response to the need to develop *capabilities* through properly preserving and disseminating indigenous knowledge to the human society recommended that libraries and archives should among other functions implement programs to collect, preserve, disseminate indigenous knowledge; make available and promote information resources which support research and learning about indigenous knowledge and traditional knowledge, its importance and use in modern society; and to publicize the value, contribution, and importance of indigenous knowledge and local traditional knowledge to both non indigenous and indigenous people (IFLA, 2004).

According to Ssenyonga (2016), libraries, archives and museums' contribution in Uganda goes beyond the preservation of artefacts because of their focus on local cultural resources and their distribution throughout the country. They play an important role base on their *social context of use* in highlighting Uganda's diverse cultural resources and promoting important national values of tolerance and respect for identity and cultural diversity - an essential function in a potentially fractious country such as Uganda, where the many different ethnic groups have to engage with each other in order to live in peace and harmony (Ssenyonga, 2016). This is especially important in the case of indigenous minority groups, who often see their identity threatened, and are powerless to influence issues affecting them. Libraries therefore play a crucial role through their *social context of use* in guaranteeing access to indigenous knowledge, as well as enjoyment, expression, protection and preservation of indigenous cultural rights.

Gender equality and women empowerment
Louise and Romero (2017) define empowerment as the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Empowerment involves developing *capabilities* for making self-decisions regarding education, participation, mobility, economic independence, public speaking, awareness and exercise of rights, political participation and access to information. According to Jones (2009), community libraries in developing countries can be important sites of information and knowledge exchange and acquisition for women with little or no formal education living in communities characterized by extreme poverty and gender inequities. As locally managed and operated institutions, specific information needs of women identified by community members based on their *social context of use* shape their mandates, activities, and types of resources they can use to gain gender equality and women empowerment. Libraries offer a "neutral" space where women can safely gather and independently or collectively pursue learning in areas of relevance and interest to them to improve on their competence and capabilities to achieve gender equality and women empowerment (Jones, 2009).

Within the digital divide of access to ICT in a developing country like Uganda exists another gap: digital divide between boys and girls and between men and women (IFLA, 2012). In rural areas in particular, girls and women are often restricted to traditional roles, and do not have equal access to technologies and technology training. A study done by Beyond Access (2012), however, shows how the introduction of an ICT training program designed to improve the *capabilities* of female farmers by the National Library of Uganda and reduce on the digital divide between women and men, have contributed to gender equality and women empowerment. After conducting background research in local communities, the library found that female farmers have many unmet information needs,

and would benefit from access to information on weather forecasts, crop prices, and crops planting, particularly in local languages through the ICT training program. As a result, the program has been able to develop the *capabilities* in form of functional knowledge and skills of women farmers and empower them by increasing their economic well-being through technology skills and helping them set up online markets for their agricultural products (Beyond Access, 2012).

Environment and natural resources

Library and information services do a lot more to contribute to a zero waste society than their vision, mission, objectives and other public statements suggest. According to Rowley (2006), many of these contributions emerge naturally as part of their core roles of promoting digital citizenship, knowledge creation, learning and leisure as reflected in *capabilities* and *social context of use*. Examples here include firstly "borrowing" where libraries have a natural recycling role through their provision of books, journals, audiovisual material and other information sources for the use of many people; and secondly, it is very likely that libraries do respond to policies established by their parent and funding bodies in the areas of corporate social responsibility, sustainable development, and environmental management based on their *social context of use*. Edmonds (2005) discusses some of the initiatives being taken by libraries in the London Borough of Haringey in the field of environmental conservation as including purchase of green energy; operating buildings in a more energy efficient way; and installing energy efficient lighting systems when refurbishments are undertaken. Libraries also make a contribution to the environment for their community through the construction and maintenance of library buildings that act as meeting places for communities, and may play a role in urban regeneration and sustainability projects.

The Ministry of Environment and Natural Resources of the Republic of Uganda through the National Environment Management Authority (NEMA), has for example, embarked on expanding its readership through a program of setting up Environmental Information Resource Centres in 25 Districts in Uganda (NEMA, 2009). This program has since then through *social context of use* enabled the dissemination of environmental information to the grass root population to assist in the sustainable use of Uganda's natural resources. The library has seen a steady growth in the number of users since its establishment due to the fact that environmental issues have gained a lot of importance in recent times both nationally and internationally. Through its work, the Library has been able to develop and maintain a collection of scientific and technical information on the state of environment both nationally and internationally from the *social context of use* perspective, which have contributed tremendously in analyzing trends, assessing problems and promoting activities leading to sustainable development in the field of environment and natural resources conservation (NEMA, 2018).

Climate change

Williams et al. (2016) point out that as long-standing keepers of democracy and information stewardship, library professionals based on their *capabilities* are a natural fit for advocating and promoting sustainability within their communities. From seed libraries to Occupy Wall Street libraries, library professionals' view of sustainability extends beyond environmental concerns to include community activism, economic development, and social equity. Empowering people, facilitating dialogue, and providing

resources for climate change mitigations and a more resilient future are at the center of librarians' vital and changing roles. Further, in a world struggling for sustainability, libraries continue to critically evolve to embrace their communities' successes and adversities and library associations bring together professionals to co-create solutions, share expertise, and bolster resilience against climate change through learning and community building. Edwards (2005) synthesizes the intentions and objectives of such sustainability-oriented groups against climate change with the three E's, "concern for the environment, the economy and social equity," where sustainability is recognized as "a common language that links the central issues confronting our civilization as well as its potential to bring social change values into the mainstream." As community hubs and centers of change and learning, libraries absorb the shifting environment to co-create spaces and services for a sustainable future.

According to the United Nations (2015), climate change has become the "defining human development challenge of the 21st century while climate stability has been classified as a key "global public good" because it is a good that "benefits all countries". Equally, access to information and knowledge joins the list of key global public goods where ICTs have become major drivers of economic growth and social development and a climate change mitigation measure; and there are close links between climate change, access to knowledge, and evolutions in ICTs. Kalas and Finlay (2009) highlight ICTs contribution to climate change adaptation strategies through providing access to relevant information, raising awareness at the grassroots level, and facilitating learning and practical knowledge sharing at the community level, while empowering the poor and marginalized to raise their voice for political accountability and concrete action. Some of the concrete examples at grassroots level that demonstrate opportunities to adapt to climate change using ICTs according to Kalas and Finlay (2009) include informing and raising awareness on the effects of climate change; reaching remote villages through information dissemination and enhancing the effectiveness of early-warning systems for disaster prevention and risk reduction; identifying, building, documenting and sharing locally rooted and contextualized adaptation strategies and solutions among communities; facilitating local risk assessments and making communities part of the process to mobilize local knowledge and develop local coping mechanisms; and creating a repository of information on disaster management and risk mitigation.

Science, technology and innovation

The SDG 2030 agenda calls on all countries to enhance research, upgrade technological capabilities, encourage innovation, and grow the number of research and development workers per one million people, and increase public and private research and development investment (United Nations, 2015). Uganda has made progress in the area of science, technology and innovation as seen in the number of research and development products and related policy framework including the recent creation of the Ministry of Science, Technology and Innovation to lead in the development and implementations of research, innovation and scientific discovery and inquiry in which the information sector is supposed to play critical roles (NPA, 2007). According to The Advocates Coalition for Development and Environment (ACODE) (2019), it is widely acknowledged that the application of science, technology and innovation increases efficiency of production systems and enhances industrial competitiveness, and that what gives a nation competitive edge in term of *capabilities* are the speed with which it can identify, utilize

and diffuse new information and knowledge through effective performance of the information sector. Therefore, Uganda must harness science, technology and innovation if socio-economic transformation is to be achieved through increasing access to information on appropriate technologies; assessment of existing information policies and strategies, identifying challenges faced and best practices at local, national and global levels; and putting in place affordable and adaptable ICT tools and services in libraries which are accessible by users, including free and open source library software (UNESCO, 2019).

Uganda Vision 2040 (NPA, 2007) identifies slow technology adoption and diffusion as a challenge that must be tackled to facilitate implementation of SDGs as reflected in Uganda Vision 2040. Some of the issues that it identifies include promoting research and development to promote information and knowledge uptakes, strengthening the intellectual property management system, and establishment and strengthening of science and technology information management systems and services to facilitate knowledge transfer, sharing and exchanges (NPA, 2007). Other key areas of interventions according to UNESCO (2019), may include developing capacity to identify, gather, assess and usefully disseminate science, technology and innovations information and knowledge; raising information professional standards; developing integrated information action plan; creating innovative knowledge networks among stakeholders - government, educational, professional practitioners, commercial sector, private sector and the civil society; and using ICTs and all information and communication media at local, national, regional, and global levels to advance science, technology and innovation.

Conclusion

Building an ideal nation requires a holistic approach and all facets of human activities and indices of nation building must be taken care of if all SDGs are to be achieved by a developing country like Uganda. Although this review is non-exhaustive, it has demonstrated that library and information services are vital tool in all forms of human endeavor for the realization of the SDGs as reflected in Uganda Vision 2040. It is the linchpin of national development both as enablers as well as a requirement for achieving SDGs. In order to develop, a country like Uganda must collect and provide access to adequate and up-to-date "information on food security, health, democracy, population, education, family planning, youth empowerment, gender equality, environment, climate change, human rights, and science and technology as reflected by Uganda Vision 2040 if socio-economic transformation is to take place. It is therefore imperative that all efforts must be put in establishing effective library and information services for the proper management, provision, and dissemination of information and in ensuring that these services must function beyond conventional practices to achieve greater impact in moving towards achieving the SDGs as reflected in Uganda's Vision 2040 through collaboration with other organizations, institutions and professional bodies at local, national and global level.

The SDGs as reflected in a customized Uganda Vision 2040 are a universal agenda for transforming countries across the globe, and to achieve this transformation, we must rethink the approaches that have left Ugandan libraries out of national planning, implementation, and decision making, and monitoring process. These would include among others developing existing and funded network of library and information

infrastructure and services that reach the local, institutional, national and international level and which can be used to deliver programmes including government programmes in hard-to reach places; developing capabilities through enhanced skills and resources to help achieve universal literacy; developing public access to ICT facilities and infrastructure to supports digital inclusion for all levels in the country; putting in place appropriate library and information services regulatory and policy environment; and promoting gender equality in library and information services policy making and decisions support if the SDGs goals as reflected in the Uganda Vision 2040 are to be achieved.

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