



Library and Information Science Initiatives and Resources for Sustainable Development

Okoroma, F. N.

Kenneth Dike Library,
University of Ibadan, Nigeria

ABSTRACT

Library and information science remains the pivot that drives societal development. Advanced economies are reputable for access and utilization of huge quality hard information, as this is a driving force that triggers and sustains development at all levels. Though Library and Information Science (LIS) through their various activities and resources have been playing a key role towards enhancing sustainable development, yet the literature output of LIS scholars capturing sustainable development issues is relatively low when compared with the increasing importance of the subject in the scientific world. This work focuses on Library and information science activities and their resources as it relates to sustainable development. The paper brings to the limelight, the role of Library and Information science (LIS) activities and resources on sustainable development. Such roles include awareness/ advocacy programs towards achieving sustainable development goals. It showcases and maximizes access and impact of valuable literatures, which trigger societal advancement. Again the development of information literacy programme by LIS centers enhances both information access and utilization capacity of the general public and decision makers. This on the long run translates to wisdom and ideas that propel societal development. Others are Open Knowledge Foundation, Green library and the development of Institutional Repository, which is a crucial resource in the advancement and sustenance of the different arms of the society, including the political, judiciary, health sector, education, transportation, industries, power, commerce and infrastructure.

Keywords: Sustainable Development, Library Initiatives, Information Science, Resources, Sustainable development goals.

INTRODUCTION

Library and Information Science is an academic discipline which deals with the organization and dissemination of knowledge, embedded in print and digital resources. The modern Library and information centers have metamorphosed into a beacon of knowledge; it is not about the physical building, but an information system that brings the best and appropriate knowledge to the global multidisciplinary community, through their quality collections, innovative services and other activities/projects, with cutting edge facilities. It is a proven fact that adequate relevant knowledge gives an individual power or ability and capacity to create (e.g. wealth, economic change and diversification), modify and sustain what is already in existence for the good of all in the society. This is in harmony with the meaning and focus of sustainable development (SD) and sustainable development goals (SDGs). Sustainable development has

been described as a development which meets up with the needs of the present generation without compromising the future generations' needs. It is the process of transforming a nation's economic, political, social, religious, educational and cultural values in order to improve human dignity and general well being. (Blessing, 2018, WCED, 1987). If sustainable development is to be attained, the citizens need to be well informed and knowledgeable, this can be achieved through appropriate information resources selection, organizing and dissemination in various formats taking into cognizance the development indicators as raised in the sustainable development goals. Okoroma (2011) and Blessing (2018) ascertained that libraries play a crucial role in realizing the Sustainable Development goals, as it is a centre for research, education and nation development through information empowerment. Therefore for sustainable development goals to be achieved, Librarians and information scientist must never be left out in the discourse, as they are the custodians of the world's wealth of knowledge. This is imperative as one cannot separate development from knowledge, and knowledge is residence in information.

While research and literature on sustainable development has been growing exponentially during the recent time, publications emanating from Library Information Science background remain relatively few. That shows that the productivity of LIS scholars dealing with the issue does not reflect the topic's rising prominence in the general scientific community. Again none of the available literature actually captured the title "Library and Information Science activities and resources, and sustainable development"

This paper focuses on Library and Information resources Science activities and resources as a driving force in sustainable development.

The general objective of this work is to identify the roles of Library and Information Science in Sustainable Development.

The specific objectives are to highlight the impact of :

1. Library and Information Science activities and resources as a driving force in sustainable development.
2. Impact of Institutional repository (a key library resource) on sustainable development

LIBRARY AND INFORMATION SCIENCE AND SUSTAINABLE DEVELOPMENT

It is obvious that the political elites, organizations and the entire citizens need both knowledge and wisdom to drive the economy and all other aspect of SDGs. All these can be found in literature. Libraries and information centres are the custodians of these valuable literatures as they capture and house billions of printed and electronic resources in different versions and languages. According to Meschede, (2019) the Sustainable Development Goals (SDGs) of the United Nations went into effect on January 1, 2016, with the main aim to eradicate poverty, preserve the planet and to ensure prosperity. Shah (2012) added that SD covers a variety of interrelated subjects in the areas of environmental, economic, political and social, all within the confines of the world's natural resources to ensure that everyone enjoys peace and prosperity by the year 2030.

The seventeen SD goals are: 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; Reduction in inequality, Sustainable cities and communities, Responsible consumption, Protection of the planet, Life below water, Life on land; Peace and justice and Partnership for the goal. (United Nations, 2015). Nicholas & Perpetual (2015) added that SD has to do with the overall change and improvement in every given society as related to individual progress.

Studies have shown that Library and Information Science (LIS) through their various activities and resources have been playing a key role in raising awareness, and advocacy programs towards enhancing sustainable development. (Christine Meschede and Maria Henkel (2019) and Haridasan (2021). Haridasan, (2021) affirmed that Library websites serve as an outstanding medium that showcases libraries and their information resources to the world. This maximizes access and impact of the valuable literatures and triggers societal advancement. Again, libraries have been reported to be promoting sustainable developmental goals through various institutional initiatives. Some of the recent Library initiatives are the development of information literacy skills which enhances the information access and utilization capacity of the general public and decision makers. It is one thing for information to be available and yet another thing for it to be speedily connected to the right users that needed it as at the time of need. This is made possible through the acquisition of information literacy skills, provided through libraries' initiatives. An example of such initiative is the Open Knowledge Foundation. This is a United Kingdom based global nonprofit network that promotes and shares information without a fee, founded by Rufus Pollock in 2004. Others are: Green transformation for sustainable development, Green library and Information Literacy in the Green Society. Green library is a modern library that minimizes the consumption of electricity (in order to reduce its effect on the environment) while maximizing the use of renewable energy sources eg solar energy, air and the planting of trees and hedges around the library.

Furthermore, Libraries through the provision of conducive environment for their clientele for continuous learning, relaxation and personal development is a strong feature that propels analytic mind, improved physical and mental wellbeing and innovative thinking, to deal with the seventeen points in the societal development agenda. The calm atmosphere in the library has a way of taking the user to a world of imagination and inspires him into innovation, in poetry, science, history and every aspect of the SDG.

Prominent among the library and information resources of invaluable value to the SD is Institutional Repository. In the recent times many libraries have taken the initiative for the establishment of IR system, a system that captures institutional literature, digitize same and showcase to the world, for maximum access, impact and societal development (Meschede, 2020; Okoroma, 2019 and Beutelspacher, Purnk and Vasileva, 2018).

INSTITUTIONAL REPOSITORY A KEY RESOURCE FOR SUSTAINABLE DEVELOPMENT

Institutional repository is connected partially to the thought of a computerized library, which deals with the capturing, processing, preservation, and distribution of electronic materials. Institutional repository archives center around the institutional outputs delivered by

specialists in scholarly network or different organisations', which makes it less demanding to exhibit their social, scientific and budgetary qualities (Dabholkar, 2008).

There are various types of institutional repositories with diverse kinds of contents. The main extensively deployed sort of institutional repository is the one called 'eprint' depositaries. According to Jones (2009) E-print means electronic pre-print and post-print publications of research papers. Institutional repositories enable widespread communication of institutional research activities and education. It provides for a free sharing of information and again encourages collaboration amongst researchers and institutions. Jones (2009) explained that it is a fact that if research is accessed and understood very fast, the faster every individual will benefit from it. This will in no small measure hasten developmental activities in the society. This is in view of the fact that when the various kinds of digital materials are presented in IRs, comprising faculty e-prints, work of students, and primary archival sources, they have the potentials of turning into the most profitable scholarly capital of an institution and the nation.

IMPACT OF INSTITUTIONAL REPOSITORIES (IRS) ON SD

The impact of IRs on SD is directly linked to the benefits of the repositories to institutions, individuals and the government. According to Pickton & Barwick (2006), they can be grouped into the following categories:

- Institutional repository increases visibility and prestige both for the individual author and the host institution. This visibility aids in connection of the authors and their host institutions to organizations/individuals that they are most needed and relevant to.
- Institutional repository helps in centralization and storage of all types of institutional output, including unpublished literature, where in lies the blue prints for SD.
- It supports learning, teaching and research. Links may be made with the virtual teaching environment and library catalogues, and
- Again Institutional repository breaks down publishers' costs, permissions barrier, alleviation of requirement to trust publishers to maintain information in the long term.

Thus, institutional repositories will promote more research, a wider communication, resource sharing between different universities regionally and globally as well as provide maximum visibility to the institutions that host them, by showcasing their intellectual output on the internet.

In the case of the host institutions, the establishment of institutional repositories will bring about tremendous benefit to the entire community. For instance, not only will institutional repositories preserve and communicate the intellectual research of the university community to the scientific world, it will also help to produce new publications at a lower cost. This new publication further enriches the global community toward societal innovation and advancement.

On the other hand, the government benefits from institutional repositories by gaining value for the resources used in research through research availability, access, and optimal utilization for formulating developmental policies. Institutional repositories promote democracy by sharing government data as speedily and generally as could be expected under the circumstances.

Institutional repositories furnish various arms of government with data on research outcomes to make rational decisions.

Additionally, institutional repositories will impact on the professionals by creating and sharing knowledge, and through the building of personal and collective learning models that facilitate organisational learning. Institutional repositories allow professionals to have access to the peer-reviewed papers, the majority of which is not accessible in open libraries. It likewise empowers researchers, writers, technologists, doctors, and others to make use of cutting-edge materials for their advancement and the eventual transformation of the various arm of the society eg the judiciary, health sector, transportation, power and commerce.

Again, well established institutional repositories aid in exploration and integration of grey literature/rare materials and other local literature to the general collection of the libraries for the promotion of research, teaching, and learning and national development. This indicates that institutional repositories will help in the preservation and conservation of grey literature which helps to boost the economy, as data on developmental issues are locked up in these valuable literatures. IR helps to facilitate the development and sharing of digital teaching materials and in supporting student endeavors, as well as provide access to theses and dissertations and a location for the development of e-portfolios. All these have economic values and aid in sustainable development.

Swan (2013) studied the values that repositories deliver to institutions. According to the author, IRs will expose the outputs of the institutions to a global audience thereby maximise the impact and gains from these scholarly outputs. IRs will showcase the institution to prospective students, prospective staff, and other stakeholders; collect and curate digital materials; manage/ evaluate research and teaching activities as well as collapse time and space for collaborative and large-scale projects. It has been ascertained that the present scholarly communication system is a limiting factor, rather than an expansion factor to the availability and utilisation of most scholarly output, while also obscuring its institutional origins. Several journal subscriptions prices have increased which has resulted in subsequent cancellations of subscriptions, this further reduces the audience. In the light of this, the role of alternative scholarly publishing models, such as institutional repositories, in breaking the monopolies of publishers and increasing the awareness of university intellectual output becomes increasingly inevitable. With a digital repository, clients all over the world do gain access to institutional resources which can be found in a variety of ways. For instance, if it is a known work and author, the user can Google the author's name and topic to be taken right to the repositories file. The fact that scholars across the globe can have access to other scholarly writings and research means that institutional repositories enhance free sharing of information, collaboration, and widespread research activity and institutional education. All these have positive implications on Sustainable Development,

Works that are accessible via a repository would possibly have increased visibility of the author as the citation level of that work will be enhanced. The diversity of access points, ease of retrieval, coupled with well-organised and maintenance characteristics of IRs amongst other factors should be the factors that are likely to be responsible for the enormous use of the digital collection which is in contrast to the print collection, as identified in Piorun (2008). Agyen-

Gyasi and Frempong (2011) added some other benefits of institutional repository which are: the provision of practical opportunities to increase faculty and management recognition, and of their publications or research fields, getting proper access to the wealth of knowledge in the form of technological and scientific information which are very critical for development, and making available the scholarly outputs that are captured and preserved in its repository to its faculty and the rest of the members associated with it. Repositories are exceptional advertising and marketing tools because it communicates the capacity and quantity standard of the organisation by showcasing the research and other intellectual activities of both the faculty and student.

Adebayo (2009) in his contributions to the values of IR stated that IRs bring all research materials of an organisation together; preserve them for research and posterity, as well as provide the bases to see at a glance and appreciate an organisation's research output. Crow (2002) identified the effect that institutional repositories may additionally have on the numerous stakeholders, such as research sponsors, faculty, students, administrators, librarians, as well as publishers. According to Crow, an institutional repository is likely to augment the functions played by the archives of universities, depending on the university. University archives usually serve two purposes: to manage the administrative records of the university to satisfy legally mandated retention requirements and to preserve materials which are connected to the history of the institution, the achievements, and activities of its faculty members, officers, staff, students, and alumni. While the goal of institutional repositories, is to preserve the whole scholarly output of the institution.

IR SUPPORT TO ACADEMICS

IR greatly support academics and their endeavors, who are key influencers in SD. The impact of academics on societal development is directly linked to appropriate and adequate research and literature output, coupled with the education of the citizenry and manpower production. (Okoroma, 2021)

Again, academic authors unlike commercial publishing, hardly receive any form of direct incentive for the research output which they publish, instead, their publications are used for career development, professional recognition and to expand knowledge in their field.

By doing away with the limitations posed on the physical page that is associated with print materials, digital publishing enlarges the quantity of research that can be worthy to be made available for review. In this way, IRs provide an avenue for a larger amount of researchers to upload their work in a recognised forum. Apart from the advantages for authors in faculties, institutional repositories also render great benefits to teaching faculty by including non-ephemeral faculty-produced teaching materials. In this case, the repository serves as a resource supporting classroom teaching. These materials might include concept illustrations, visualizations, models, course videos, and the like—much of the material often found on course web sites. This benefit should help extend the appeal of institutional repositories across a broader audience of research and teaching faculty. Student electronic theses and dissertations additionally provide logical content materials to be captured with the institutional repositories' resource, and to that extent, students are equally author stakeholders in such repositories. In all, IR is an enabling device for teaching, learning, and research. It creates marketing activities

for a scholarship, attracts high-quality students, staff and funding; in addition to a location for the centralisation, storage, and long-term preservation of all kinds of institutional output which are assets towards SD. (Cullen and Chawner, 2009; Prosser, 2004;).

Publishers and IR

The open access (OA) feature of institutional repositories poses a threat to the already existing subscription-based commercial models and the streams of revenue generated by many scholarly publishers. Both the commercial publishers who are trying to establish shareholder value, and nonprofit scholarly societies, depending on journal revenue to help subsidize their operations, are relying on subscription-based revenue streams. (Tenopir and King, 2000; Evan and Wurster, 1997). IRs create a number of the possibilities to distinctive businesses; together with authors, researchers, scholars, and institutions. E.g., OA delivers a global audience for authors and publishers. It provides users with access to the literature they need for their research, education and personal development that is free from any access barrier. It increases their convenience, reach, and retrieval power and solves the pricing and permission crisis.

Suber (2004) collaborates that for universities, OA reduces recurring expenses incurred on journals, and promotes their capacity to disseminate knowledge. Also, OA IR makes articles highly visible, retrievable, discoverable, and useful for journals and publishers. Funding agencies (including the government) and the citizens are not left out in the values delivered by OA institutional repositories. Institutional repositories increase the return on the investment in research, by making the results of the funded research more widely available, more discoverable, more retrievable, and more useful but as well, give citizens access to peer-reviewed research most of which is not available in public libraries

From the ongoing, both the Governments, institutions and citizens are tremendous beneficiaries of IR. As sponsors of research, they also gain from institutional repositories in the same manner that investment groups do. Institutional repositories also help them indirectly by enabling researchers, physicians, manufacturers, technologists, and others to make use of cutting-edge materials for their benefit which translate eventually to a better life for the citizenry when the research outcomes are used for developmental ventures.

Finally, the sustenance of institutional repositories will result into the formation of consortia: within the institutions, regionally, and globally. Consortia can also prove to be the fastest means to the multiplication of institutional repositories and moving up to a critical mass of open access content. On the long run, IR will help to resolve developmental issues, as data on developmental issues will be freely made available for access, and utilisation by decision-makers to accelerate development in various parts of the world while providing good life for the citizens.

CONCLUSION

A nation's pace in economic, political, social, religious, educational and cultural matters is directly proportional to its hard quality information consumption and utilization. This is where library and information science centers come in, helping to bridge the gap. With appropriate technologies LIS have been devising various initiatives and resources to support information distribution and utilization, educational activities and personal development of the entire

citizenry in order to address the sustainable development goals. There is therefore urgent need for adequate and continuous support and input from their stake holders, for a sustainable system. As sustainable LIS systems will lead to achievable SDGs and that will translate into sustainable development.

Reference

- Abata-Ebire, B, D. and Adebawale, J. A. (2018) Achieving Sustainable Development Goals: The Roles of Libraries. *International Journal of Applied Technologies in Library and Information Management* 4 (2) 10 - 89-95
- Cullen and Chawner, (2009). Institutional repositories and the role of academic libraries in scholarly communication. *Proceedings of A – LIEP (Asia –Pacific Association of Library and information Education and Practice)* Tuskuba.
- Dabholkar, R. Prabakaran, R. Kurahatti, B.T. (2008). Building an Institutional Repository: A TIFR Initiative. *Bulletin of the American Society for Information Science and Technology*, 35(4); 34-45.
- Evan, P. B. and Wurster, S. W. (1997). Strategy and the new economics of information. *Havard business review*, 70-82
- Ezeani, N.E. and Ezema, I.J. (2011). Digitizing institutional research output of University of Nigeria, Nsukka. *Library Philosophy and Practice*. Retrieved February 25, 2012 from <http://unl.edu/LLP/ezeani-ezema.htm>.
- Haridasan, S. and Firdaus, S. (2021), "Application of Web-Based Sources and Services for Sustainable Development in University Libraries" *Library Philosophy and Practice* (e-journal). 4878. <https://digitalcommons.unl.edu/libphilprac/4878>
- Meschede, C. and Henkel, M. (2019), Library and information science and sustainable development: a structured literature review. *Journal of Documentation* Vol. 75 No. 6, 2019 pp. 1356-1369 © Emerald Publishing Limited.
- Nicholas & Perpetual (2015). Library and Education: Panacea for Sustainable Development in Nigeria. *Asian Journal of Information Science and Technology* V. 5. 10.51983/ajist-2015.5.2.115
- Obaseki, T. I. and Maiwada, U. (2017) Role of Library and Information Science Professionals towards Sustainable Development in Nigeria. *Information Impact: Journal of Information and Knowledge Management*, Vol. 8 (3) Pg 132 – 136
- Okoroma, F.N. (2011). Towards effective management of grey literature for higher education, research and national development", *Library Review*, Vol. 60 No. 9, pp. 789-802. <https://doi.org/10.1108/00242531111176808>
- Okoroma, F. N. (2019a). Technological and Infrastructural Issues of Institutional Repositories in University Libraries in Nigeria: And the Way Forward, *International Information & Library Review*. Retrieved on 10/09/2019 from <https://doi.org/10.1080/10572317.2018.1491710>
- Okoroma, F. N. (2019b). "Awareness, Knowledge and Attitude of Lecturers towards Institutional Repositories in University Libraries in Nigeria", *Digital Library Perspectives*, Vol. 34 Issue: 4, pp.288-307. Retrieved on 05/07/2019 from <https://doi.org/10.1108/DLP-04-2018-0011>
- Okoroma, F. N. (2021). *Institutional Repository in Nigeria: the way forward*. Golden-Gems Unique Multiventures, Ibadan. ISBN 9789785064193, 239p.
- Prosser, D. C, (2004) Scholar Communication in the 21st century- the impact of new technologies and models. *Serials*. 16.2:163-167.

Swan, A. (2013). Open access: A briefing paper for research managers and administrators. *Retrieved January 3, 2013, from bit.ly/R37ikn*.

Tenopir, C. and King, D. W. (2000). *Towards Electronic Journals*. Washington, DC: SLA Publishing.

United Nations (2015), "Sustainable Development Goals", available at: www.un.org/sustainabledevelopment/sustainable-development-goals/ (accessed January 5, 2018). 1368 JD 75,6 United Nations (2016), "The Sustainable Development Agenda", available at: www.un.org/sustainabledevelopment/development-agenda.