



The Rise of Environmentally-Friendly Libraries: Promoting Sustainability and Conservation in Academic Libraries in Nigeria

Amina Ibrahim Makintami¹ and Munirat Yakub²

Good-luck Ebele Jonathan Library, Yobe State University, Damaturu, Nigeria¹
Electronic Library Unit, Dr. Aliyu Obaje Library, Kogi State University, P.M.B. 1008, Anyigba, Kogi State²
amakintami13@gmail.com¹

Received: 3, October 2024 **Accepted:** 15, November 2024 **Published:** 30, December 2024

Abstract

An environmentally friendly library is committed to sustainable practices that minimize ecological impact while serving its community. This study explores the concept of environmentally friendly libraries in Nigeria, emphasizing their benefits, core principles, and strategies for achieving sustainability. The primary goal is to promote environmental stewardship and contribute to a sustainable future by reducing waste, conserving resources, and combating climate change. Such libraries not only encourage eco-friendly habits among users but also act as catalysts for positive change within their communities. The study identifies ten libraries and highlights their sustainability initiatives. It specifically examines the role of these libraries in supporting the United Nations' Sustainable Development Goals (SDGs). Findings revealed that these libraries significantly contribute to achieving SDGs by providing conducive learning environments and essential information resources. To enhance their impact, academic libraries are encouraged to collaborate for better information dissemination and to address the information needs of both government and non-governmental organizations. However, the study identifies major challenges, including poor networking among libraries and library professionals, as well as inadequate and irregular staff training. Recommendations are made to improve the effectiveness of academic libraries in supporting sustainable development.

Keywords: Libraries, Eco-friendly Libraries, Environmental sustainability

Introduction

The United Nations (UN) in their commitment to addressing critical global challenges, Heads of States within the UN collectively embraced a developmental framework known as the Sustainable Development Goals (SDGs) in September 2015. These goals, often referred to as the Global Goals, signify a strategic plan to transform our world and signal a departure from the previous Millennium Development Goals (MDGs). Planned to unfold over the next 15 years, this initiative is commonly denoted as the 2030 agenda for sustainable development. In an era where environmental sustainability is of paramount importance, institutions around the world are taking steps to reduce their carbon footprint and promote eco-friendly practices. Libraries, as information hubs and community spaces, are also joining the movement towards sustainability. This article explores the concept and benefits of environmentally friendly libraries,

highlighting various initiatives and practices that contribute to conserving resources and creating more sustainable library environments. To achieve environmental sustainability, several key principles guide the development and operation of environmentally friendly libraries. These principles include:

1. Energy Efficiency

Implementing energy efficient technologies, such as LED lighting and motion-sensor switches, helps reduce energy consumption and minimizes the library's carbon footprint. One significant aspect of environmentally friendly libraries is energy efficiency. These libraries integrate energy-saving technologies. In addition, they adopt renewable energy sources like solar panels or geothermal systems to generate clean, and sustainable power. By reducing energy usage, these libraries not only help the environment but also lower operational costs.

2. Waste Reduction and Recycling

Designing library spaces with recycling stations, composting facilities, and proper waste management systems encourages patrons to dispose of waste responsibly and promotes a circular economy. Environmentally friendly libraries implement effective waste management strategies to reduce their impact on landfills. They prioritize recycling by providing dedicated recycling stations for patrons and staff. These libraries also engage in composting organic waste, utilizing it to enrich soil or even create community gardens, by implementing waste reduction and recycling programmes, libraries contribute to the circular economy and promote a sustainable approach to resource management.

3. Sustainable Building Design and Materials

An environmentally friendly library starts with sustainable building design, architecture and construction play a crucial role in reducing environmental impact. Principles of green building include using eco-friendly materials, optimizing natural lighting and ventilation, implementing rainwater harvesting systems, and incorporating green spaces or rooftop gardens. Sustainable libraries embrace these practices, not only to conserve resources but also to create healthy and inspiring spaces for their patrons. Choosing sustainable and eco-friendly materials for furniture, shelving, and fixtures reduces the library's environmental impact. Using renewable resources, low-VOC paints, and recycled materials helps conserve natural resources.

4. Digital Transition

Embracing digital technologies like e-books, online databases, and virtual learning platforms can decrease the demand for physical materials, leading to reduced paper consumption and energy consumption associated with printing and transportation. Embracing digital technologies and shifting towards a digital library model supports environmental conservation. By reducing the reliance on physical books and papers, libraries can significantly decrease their carbon footprint. Libraries can invest in digital collections, e-books, and online resources to reduce paper waste and the energy consumed in printing, distribution, and storage. Additionally, adopting electronic systems for circulation and communication minimizes the need for paper-based processes and saves valuable resources.

5. Green Spaces

Integrating green spaces, rooftop gardens, or outdoor reading areas not only enhances the aesthetics of the library but also provides educational opportunities, improves air quality, and promotes biodiversity in urban environments.

6. Community Engagement and Education

Environmentally friendly libraries act as platforms for community engagement and education on environmental issues. They organize workshops, presentations, and events to raise awareness about sustainability topics. These libraries also collaborate with local environmental organizations, hosting guest speakers and partnering on initiatives that promote environmental conservation, by acting as educational hubs, they empower communities with knowledge and inspire sustainable practices beyond the library's walls.

To ensure the successful implementation of these principles, libraries in northern Nigeria can employ various strategies, these strategies include: conducting energy audits and implementing energy management systems to identify and address energy inefficiencies, collaborating with local recycling facilities and organizations to develop efficient waste management systems and promote recycling initiatives, engaging in partnerships with environmentally focused organizations and incorporating sustainability-related programming and events into the library's offerings, offering educational workshops and resources to raise awareness among patrons and staff regarding the importance of environmental sustainability and practical actions they can take, and participating in community-based environmental initiatives such as tree planting, beach clean-ups, or environmental awareness campaigns to actively contribute to a greener community.

Methods to Create a more Environmentally Friendly Library

Libraries are essential for promoting education and knowledge exchange in our communities. As the global emphasis on sustainability grows, it is essential for libraries to actively participate in environmental initiatives. Through the adoption of eco-friendly measures, librarians can play a role in promoting a healthier environment and encouraging visitors to embrace sustainable behaviours. If you are aiming to establish a more environmentally conscious library and are looking for guidance to streamline the process, the following strategies help to achieve this goal.

1. Introduce Circular and Shared Economy Principles - By integrating circular and shared economy principles, libraries in Nigeria can foster a more sustainable and resource-efficient campus environment while promoting responsible consumption and environmental control policies. This includes implementing shared practices for spaces such as discussion rooms, reading areas, and offices, as well as sharing expensive infrastructure or equipment like media labs, 3D printers, and music rooms. These resources should be made accessible to the community. To effectively introduce circular and shared economy concepts in libraries, the following strategies can be implemented: Educational Campaigns: Raise awareness about the benefits of a circular economy, Resource Sharing: Create platforms for sharing resources among users and organizations, Sustainable Procurement: Prioritize environmentally-friendly products and services, Repurposing

Initiatives: Encourage the reuse of materials and resources within library operations, and collaboration with other organizations: Partner with local businesses and organizations to enhance resource sharing.

2. Incorporate Eco-Friendly Equipment and Infrastructure- When procuring new materials and technologies, libraries should prioritize sustainability criteria and seek environmental certifications. Selecting eco-friendly equipment—such as sustainable computers, printers, e-book readers, furniture, and air-conditioning systems—can significantly reduce environmental impact. Additionally, libraries should aim for sustainable building designs that incorporate features such as: - Utilizing rooftop space for greenery or solar panels, incorporating rainwater harvesting systems for toilet flushing, prioritizing low-maintenance construction methods, installing intelligent lighting systems that adjust based on user needs, utilizing features like motion sensors, individual reading lights, and dimmer switches.

3. Adopt a Digital-First Approach to Library Collections and Services- Libraries in northern Nigeria should consider transitioning from print to digital resources, aligning with sustainable principles. A digital-first approach prioritizes digital materials and technology to enhance access, convenience, and engagement for library users. This strategy includes: -Procuring and creating in-house digital content such as e-books, e-journals, images, and videos, emphasizing digital content free of Digital Rights Management (DRM), Transforming library services into hybrid or fully online formats, Focusing on user experience, data management, and technology integration.

4. Encourage Environmental Literacy- By actively promoting environmental literacy, libraries in northern Nigeria can foster a more environmentally conscious and informed community, nurturing a culture of sustainability and responsible stewardship. Libraries can organize sustainability-themed events and programs to engage the community, including eco-friendly workshops, environmental book clubs, and guest speaker sessions to educate and motivate patrons to adopt greener lifestyles. Establishing partnerships with local environmental organizations can also facilitate collaborative initiatives aimed at creating sustainable libraries. Encouraging environmental literacy is vital for developing a deeper understanding of environmental issues and promoting sustainable practices through various initiatives, such as:- Curating Environmental Resources: Compile and provide access to relevant materials on sustainability, Information Literacy Programs: Teach patrons how to find and utilize environmental information effectively, Collaborative Partnerships: Work with local organizations to create impactful sustainability programs, Sustainable Practices: Showcase practical steps individuals can take to live sustainably, Educational Campaigns: Raise awareness about environmental issues and sustainable solutions, and Green Initiatives: Highlight and support various initiatives that promote eco-friendly practices.

5. Implement Recycling and Reuse Practices- Libraries should implement recycling and reusing practices to demonstrate their commitment to environmental stewardship, reduce their ecological footprint, and inspire positive behaviours within the campus community. To promote proper waste

disposal, libraries can: - Place Clearly Labelled Recycling Stations: Ensure convenient recycling options for paper, aluminum cans, batteries, and electronic devices, Encourage Resource Conservation: Promote the use of both sides of paper for printing and writing, and consider renovating furniture to extend its lifespan, Initiate Book Exchange Programs: Facilitate programs where community members can swap books, promoting the reuse of printed materials. Strategies to implement recycling and reusing practices can include:- Recycling Stations: Set up accessible and marked areas for recycling various materials, Waste Reduction Initiatives: Focus on minimizing waste generation, Use of Reusable Materials: Encourage alternatives to single-use items in library operations, Donation and Reuse Programmes: Organize drives for collecting and redistributing surplus materials, Sustainable Purchasing Practices: Buy eco-friendly products whenever possible, Education and Awareness Campaigns: Conduct workshops and outreach to inform users about the importance of recycling, and Collaboration with Campus Sustainability Efforts: Partner with other departments to enhance campus-wide sustainability initiatives.

6. Commit to Environmental Goals and Programs- By committing to environmental goals and programs, libraries in northern Nigeria can promote positive change, contribute to a more sustainable campus environment, and exemplify environmental responsibility. Libraries can develop orientation programs to educate users about their role in achieving Sustainable Development Goals (SDGs). This program may include:-Reading and Interviews with Experts: Feature discussions with sustainability experts to provide insights into the importance of libraries in promoting sustainability and the impact of sustainable practices, Workshops and Resource Guides: Organize events that engage users in supporting sustainable development initiatives, Libraries can also educate users about key frameworks, including the UN Sustainable Development Goals (SDGs), the Paris Climate Agreement, and the EU Eco-management and Audit Scheme (EMAS), and incorporate these objectives whenever possible into library operations.

Academic libraries can take these steps to demonstrate their commitment to environmental goals and programs by including- Developing an Environmental Policy by establishing guidelines for sustainable practices, Setting Specific Goals and defining measurable sustainability targets, Pursuing Green Certifications and seeking accreditation for sustainable practices, Forming Sustainability Committees through Creating dedicated teams to oversee environmental initiatives, Promoting Energy Efficiency and Implementation measures to reduce energy consumption, Enhancing Waste Management Systems and Optimizing processes for managing waste, Fostering Environmental Education in Offering courses and materials related to sustainability, Collaborating with Community Partners and Working with local organizations to enhance sustainability efforts, and Tracking and Reporting Data through monitoring the progress and sharing success stories to engage the community.

How Libraries in Nigeria can Contribute to Sustainable Development

The Rise of Environmentally-Friendly Libraries

The libraries can play a crucial role in contributing to sustainable development in several ways:

1. **Access to Information:** Libraries should provide access to a wide range of information, which includes resources on environmental conservation, renewable energy, sustainable agriculture, and other topics related to sustainable development. This access to information can help students, staff, individuals and communities make informed decisions and take action towards sustainability.
2. **Education and Awareness:** Libraries always serve as centres for education and awareness. The libraries often host workshops, seminars, and events focusing on issues related to policy-making, resource allocation, and community engagement to ensure inclusive, quality education and widespread awareness, such as environmental conservation, climate change, and other related topics, by helping to raise awareness and promote sustainable practices among the communities.
3. **Community Engagement:** Libraries are community centres (schools), the libraries providing a space for people to come together to discuss and address local sustainability issues. They can often collaborate with local organizations, schools, and businesses to promote sustainable initiatives and community engagement.
4. **Digital Inclusion:** Many libraries in northern Nigeria can provide access to digital resources and technology, by helping to bridge the digital divide and ensure that all members of the community have access to online information and resources related to sustainable developmental issues within and outside the community.
5. **Preservation of Knowledge:** The primary objective of the libraries is preserving knowledge and information for future generations. Preservation refers to the efforts and processes involved in safeguarding and maintaining information, documents, artifacts, and other forms of knowledge for future generations. This preservation is essential for ensuring that valuable information and cultural heritage are not lost over time, including materials related to sustainability, environmental science, and green technologies. the preservation of knowledge can be done through various means such as:- conservation and restoration, digital archiving, access and cataloguing, special collections and disaster readiness. Preservation of knowledge is crucial for maintaining a society's cultural heritage, advancing research and scholarship, and ensuring that future generations have access to the wisdom and achievements of the past. It is an ongoing and collaborative effort that involves the dedication of professionals and institutions worldwide.

Results

Sustainable Initiatives in Nigerian Academic Libraries.

Library	Location	Green Initiative	Sustainability Features
Ahmadu bello University Library (ABU)	Zaria	Solar panels and Rainwater harvesting	LEED certification and energy efficient system
Bayero University Library (BUK)	Kano	Energy-efficient system and sustainable materials	Historic building restoration and Green Spaces
Covenant University Library	Ota	Green roof and Energy-efficient system	Sustainable materials and Water conservation
Federal University of Technology Library	Akure	Green roof and Composting program	Sustainable materials and Water conservation
Obafemi Awolowo University Library	Ile-Ife	Energy-efficient system and sustainable materials	Historic building restoration and Green Spaces
University of Abuja Library	Gwagwalada	recycling program and sustainable materials	Energy-efficient lighting and Green Spaces
University of Ibadan Library	Ibadan	Solar panels and Energy-efficient lighting	Sustainable materials and Green Spaces
University of Lagos Library	Lagos	Energy-efficient lighting and recycling program	Sustainable materials and Green Spaces
University of Nigeria Library	Nsukka	Green roof and Composting program	Sustainable materials and Water conservation
University of Port-Harcourt Library	Port-Harcourt	Solar panels and Rainwater harvesting	LEED certification and energy efficient system

10 University Libraries

Source: University Libraries, International Journal of Sustainability in Higher Education

Conclusion

With a growing emphasis on environmental sustainability, libraries are transforming themselves into eco-friendly spaces that lead by example. Libraries contribute by providing access to information, promoting education and awareness, fostering community engagement, supporting digital inclusion, and preserving knowledge for a more sustainable future. By adopting energy-efficient practices, sustainable building designs, digital transformation, waste reduction and recycling initiatives, and community education programmes, libraries are at the forefront of the movement towards a greener future. As vital community resources, environmentally friendly libraries demonstrate their commitment to both preserving the planet and inspiring others to do the same.

Recommendations

Academic libraries can contribute to the actualization of the UN's developmental agenda in Nigeria as well as in Yobe State in several ways:

1. **Access to Information:** By providing access to a wide range of scholarly resources, academic libraries can support research and education on topics related to sustainable development, such as poverty alleviation, healthcare, education, and environmental conservation.
2. **Research Support:** Academic libraries often provide research support services, including access to databases, research guides, and assistance from librarians, which can help scholars and students conduct research on issues relevant to the UN's developmental agenda.
3. **Community Engagement:** Academic libraries can serve as hubs for community engagement and knowledge sharing, hosting events, workshops, and discussions focused on sustainable development goals and initiatives.
4. **Preservation of Knowledge:** Libraries play a critical role in preserving and archiving scholarly work and information related to sustainable development, ensuring that valuable knowledge is accessible to future generations.
5. **Advocacy and Awareness:** Libraries can advocate for and create awareness about the UN's developmental agenda through exhibitions, displays, and other educational initiatives, fostering a culture of engagement and action towards sustainable development. By examining the ways in which academic libraries can enhance the actualization of the UN's developmental agenda in Nigeria, this study provides valuable insights into how these institutions can contribute to making the world a better place for all.

References

- Adeniran, A. (2019). The Role of libraries in environmental information dissemination: A study of selected public libraries in Nigeria. *Library management*, 40(8-9), 555-565. doi:10.1108/LM-11-2018-0124.

- Akinwumi, A. (2019). Green library practices: A case study of selected libraries in Nigeria. *Nigerian Libraries*, 52, 10-24.
- American Library Association. (2015). The ALA sustainability toolkit: Let's make a difference. https://www.ala.org/advocacy/sites/ala.org.advocacy/files/content/sustainability_toolkit.pdf
- Dutta, A. (2020). Role of partnerships and collaborations in building sustainable libraries: Insights from librarians and resource centre managers in India. *International journal of library and information science*, 12(1), 10-20. Doi:10.5897/ijlis2020.0765
- European Commission. (2020). The EU eco-management and audit scheme (EMAS). https://ec.europa.eu/environment/emas/index_en.htm
- Fagan, J. (2017). Sustainable libraries: a global perspective. *New review of academic librarianship*, 23(1), 1-16. Doi:10.1080/13614533.2017.1287756
- Federal Republic of Nigeria. (2016). *National policy on environment*. <https://environment.gov.ng/>
- Gonzalez, C. (2015). Libraries and sustainability: a study of the role of academic libraries in promoting sustainable practices. *Proceedings of the association for information science and technology*, 52(1), 1-10. Doi:10.1002/pa2.2015.14505201137
- Iwhiwhu, B. E., & Iweze, E. (2018). Sustainable development and library services: A Study of libraries in Ekiti state, Nigeria. *International Journal of Library Science and Information Management*, 4(1), 1-10.
- Nigerian Library Association. (2017). *NLA sustainability Initiative*. <http://www.nla.gov.ng/>
- National Bureau of Statistics, Nigeria (2020). *Nigeria's voluntary national review on the implementation of the 2030 agenda for sustainable development*. <http://nigeriastat.gov.ng/>
- Nigerian Library Association (NLA). (2022). Workshop on green libraries and sustainable practices for librarians in Nigeria. This initiative organized by NLA focuses on training librarians in sustainable practices.
- Nwogbaga, A. (2020). Awareness and Attitude of Academic Librarians towards Environmental Sustainability in Nigeria. *Library Philosophy and Practice*, 2020. <https://digitalcommons.unl.edu/libphilprac/4267/>
- Ogunyemi, O. (2020). The role of community resource centres in promoting sustainable development goals in Nigeria. *International Journal of Information and Education Technology*, 10(5), 347-353.
- Olaniyan, I. (2020). Libraries as partners in sustainable development: The role of Nigerian libraries in community development and environmental sustainability. *Journal of Library and Information Services in Distance Learning*, 14(1-2), 75-88.
- Parker, B. (2020). Assessing the impact of sustainability initiatives in libraries: best practices for data collection and reporting. *Library Management*, 41(6), 421-435. Doi: 10.1108/lm-11-2024-0189

The Rise of Environmentally-Friendly Libraries

- Smith, A. (2019). Getting green: a guide to sustainable libraries, buildings, and operations. *Library Journal*, 144(1), 32-35.
- United Nations. (2015). Transforming our world: the 2030 agenda for sustainable development. <https://sdgs.un.org/2030agenda>
- United Nations framework convention on climate change (UNFCCC). (2015). *Paris agreement*. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
- Ward, D. (2018). The role of libraries in promoting environmentally sustainable development: a study of selected academic libraries in Nigeria. *Library philosophy and practice*. 2260. <https://digitalcommons.unl.edu/libphilprac/2260>