Sustainability and Librarianship: History and Understanding

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Sustainability

Introduction

Sustainability was officially adopted as a core value of librarianship in 2019 at the recommendation of the Special Task Force on Sustainability (Aldrich et al., 2018). From the beginning, this task force conceptualized sustainability around the 'triple bottom line' (Tanner et al., 2019). The triple bottom line is also woven into the very fabric of the United Nations Sustainable Development Goals, a list of "17 interlinked objectives designed to serve as a shared blueprint for peace and prosperity of people and the planet - in the present and the future" (Para. 2, Apiday, 2024b). This concept of the triple bottom line, or triple axes frames sustainability around three elements: the social, the environmental, and the economic. It was developed by John Elkington in 1994 to encourage businesses to go beyond profit motives when thinking about how to handle climate change (Elkington, 2018). While the importance of businesses looking past the profit motive is undeniable, is this really the best way for the field of library and information science (LIS) to conceptualize sustainability, and if not, what framework should we use? By asking these questions we can ensure that we're living up to our core values as librarians and best serving our communities.

Before we begin to answer these questions, however, we must first understand both what we mean when we talk about sustainability and the history of how the field of library and information science has approached sustainability. It is then necessary to examine the

important role that library and information science can play in furthering sustainability and investigate how libraries around the world are working to promote this core value and address the urgent problem of climate change. Finally, we will consider whether the triple bottom line is sufficient in serving as the framework for how the field of library and information science understands and promotes the concept of sustainability and offer some recommendations regarding building an alternative conceptualization.

Defining Sustainability and the Stakes

To understand the relationship between sustainability and the field of library and information science it is first necessary to understand what we mean when we talk about sustainability. Though there is no universal consensus on what the definition of sustainability is, the term is most frequently understood to mean the ability of something to continue forward into the future. Though there is some library and information science research that uses this term in relation to issues other than the environmental or ecological, most often in relation to the preservation of information, that is not the meaning that we will be exploring in this paper. As anthropogenic climate change is pushing us beyond the earth-system boundaries necessary to maintain a "just world on a safe planet," it is no longer feasible to think of any system as sustainable if it does not consider the environmental aspect of the term (Gupta et al., 2024).

The earliest usage of the term sustainability appears to be a German official in 1713 discussing a lack of firewood due to the

smelting of iron ore (Tanzin & Atikuzzaman, 2024). It took 240 years for the term to migrate to academia as Kamińska et al. (2022) trace the first use of the term "sustainability" referencing a natural resource in a scholarly journal to a 1953 article by Joseph L. Fisher in the Journal of Land Economics. They then identify the current most prevalent definition of sustainability as "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs," as well as a secondary definition, "a requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can potentially be shared by all future generations" (p. 2).

The first of those definitions is identified by Singh & Mishra (2019) as the "original definition of sustainable development" originating in the Brundtland Report for the World Commission on Environment and Development. They identify an additional definition as coming from the International Union for the Conservation of Nature, "Sustainability is the capacity to improve the quality of human life while living within the carrying capacity of the Earth's supporting eco-systems," as well as the following from the Forum for the Future, "A dynamic process which enables all people to realize their potential and to improve their quality of life in ways that simultaneously protect and enhance the Earth's life support systems" (p. 2). These definitions are all fitting, but don't convey the urgency needed to address the problem of anthropogenic climate change.

Henk (2014) invokes the triple bottom line by defining sustainability as ecology, economy, and equity. A more complete definition is offered by Fedorowicz-Kruzewsca (2020) who argues for more specific terminology and defines environmental sustainability as "minimizing the negative human impact on the environment" in categories such as "air quality, drinking water, heavy metals, waste management, climate change, pollution emissions, water resources, biodiversity, agriculture and fisheries" (p. 113). This last definition might be the most specific when it comes to environmental issues, but it is lacking the social aspect found in the triple bottom line. However, the work of Gupta et. Al (2024) in the *Lancet Planetary Health Commission* demonstrates that the social and environmental are inherently linked. Per the Earth Commission's press release on the article from 2024, "We cannot have a biophysically safe planet without justice" (para. 3).

Using the theoretical framework of Gupta et Al (2024), we can define sustainability as Earth-system Justice which builds on "epistemic justice and local-to-global justice scholarship" and "includes procedural justice (access to information, decision making, civic space, and courts) and substantive justice in terms of ensuring access to basic resources and services while ensuring no significant harm and allocation of the remaining resources, risks, and responsibilities" (p. e814). This is the most comprehensive definition of sustainability and with it we can begin to reconceptualize how we think of the concept in the field of library and information science.

Before we do that, though, it is important to understand the history of how LIS has approached sustainability.

History of Sustainability in the Field of Library and Information Science

Origins of the Movement (1970-2010)

The discipline of library and information science has a long history of promoting sustainability through environmentally conscious practices. Žalėnienė and Pereira (2021) state that teaching sustainability has been considered part of the remit of higher education since 1970, but it wasn't until the Talloires Declaration was released twenty years later, in 1990, that this connection was officially made explicit and began expanding to universities across the world with the creation of the Association of University Leaders for a Sustainable Future (ULSF) (Jankowska et al., 2014). With the release of this statement the connection between sustainability and higher education, and thus the field of library and information science as well, began to grow in earnest.

Meschede and Henkel (2019) pinpoint the year in which the first library and information science article related to environmental sustainability was published as 1990, or 3 years after the Brundtland Report. Kamińska et al. (2022) identify this as the year that the Talloires Declaration was signed which they identify as "the decisive factor which forced academic libraries to start going green" (p. 2). Over the next 10 years the Green Library Movement began to take off. Much like the term sustainability, there is not an agreed upon definition for the term 'green library,' but the most common elements

identified in the literature on the topic are: a green building such as one that has been LEED certified, green practices like recycling or going paperless, environmental education programming, community partnerships to promote sustainable practices, and the availability of resources related to environmentalism in the collection (Ajani et al., 2024; Fedorowicz-Kruszewska, 2020; Fourie, 2012; Li & Yang, 2022). Since green libraries are essentially libraries that promote environmental sustainability, there is not much of a need to distinguish the two concepts when considering the history of the movement.

Antonelli (2008) describes a series of articles published in *Wilson Library Bulletin* on the topic of green librarianship in 1991. That same year the *Green Library Journal* was established, with the first issue released a year later in 1992 with contributions from the recently created ALA Taskforce on the Environment. The following year, Atton (1993) published an article urging libraries not to take a capitalistic approach to environmental sustainability, framing it instead as a social justice issue. According to Meschede and Henkel (2019), the research throughout the rest of the 1990's would be shaped by Amanda Spink, who authored the second largest number of papers included in their literature review. Spink (1999) urged the field of library and information science not to link sustainable development to increased industrialization across the globe as she feared the results of further industrialization would be untenable. Unfortunately, the warnings of Atton and Spink went unheeded.

According to Kamińska et al. (2021b), the research over the next decade, from roughly 2000-2010, was focused primarily on sustainable information and information communication technologies. During this time, in 2002, the International Federation of Library Associations (IFLA) released "a statement on libraries and sustainable development, recognizing the essential role of libraries and the access to information they provide for sustainable development" (p. 730, King, 2024). That same year the UN declared that 2005-2014 would be the Decade of Education for Sustainable Development (Žalėnienė & Pereira, 2021). While research continued abreast during this period, a noticeable uptick in the amount of literature produced occurred in 2010 (Mathiasson & Jochumsen, 2022).q

Increased Awareness and Adoption of SDGs (2010-Present)

From 2010 on, the notion of sustainability was taken up at an institutional level within the field as the Australian Library and Information Association (ALIA) created the Sustainable Library Group in 2010, with the American Library Association (ALA) following suit three years later with the creation of the Sustainability Round Table in 2013 (Fedorowicz-Kruszewska, M., 2023). Despite being bolstered by the support of associations and other institutions, there were still problems related to how we thought about sustainability within the field and profession as the research that was being undertaken at the time would show. Khalid et al. (2021) review the literature and describe the following issues that were being discussed at the time: lack of resources, specifically those related to collection development; inability to address environmental harm caused by the

interiors of libraries and the buildings themselves including high energy consumption and large carbon footprint; technological advances contributing to e-waste; lack of sustainability initiatives, expertise, and competencies related to sustainable education; lack of familiarity with concepts related to sustainability among users, staff, and professionals; inability to carry out policies; resistance to changes made to promote sustainability; refusal to recognize the severity of issues related to the problem. It was necessary for the field to take coordinated action to begin to address these issues.

In August of 2014, the International Federation of Libraries took a direct role in shaping the United Nations Sustainable Development Goals (SDG) by releasing the Lyon Declaration (*The Lyon Declaration*, n.d.). With 604 signatories, the Lyon Declaration demonstrated the widespread desire within the field of library and information science to work together towards creating an environmentally sustainable future. The following year, in 2015, the United Nations issued their Sustainable Development Goals, also known as the 2030 Agenda for Sustainable Development.

The 17 goals could be summarized as follows: "1.No poverty; 2. Zero hunger; 3. Good health and well-being; 4. Quality Education; 5.Gender equality; 6. Clean water and sanitation; 7. Affordable and clean energy; 8. Decent work and economic growth; 9. Industry, innovation and infrastructure; 10. Reduced inequalities; 11. Sustainable cities and economies; 12. Responsible consumption and production; 13. Climate action; 14. Life below water; 15. Life on

land; 16. Peace, justice and strong institutions; 17. Partnership for the goals" (para. 5, Apiday, 2024). These 17 goals are further broken down into 169 targets, and IFLA's role in creating the SDG's can be seen with ideas such as "access to information, protection of cultural heritage, global literacy, and access to information and communication technology (ICT)" appearing among these targets (Al Hijji et al., 2023a).

The same year that the Sustainable Development Goals were released, in 2015, the ALA also passed a resolution at their annual conference affirming the importance of sustainable libraries. This resolution would result in the formation of the ALA's Special Task Force on Sustainability in 2017 (Tanner et al., 2019). In a Perceptions Survey for the Task Force, Aldritch et al. (2018) found that many ALA members didn't believe that the organization's operational practices served as a model for sustainability.

To address this problem, the Special Task Force put forth several recommendations, including adding sustainability as a core value for the organization, increasing sustainability programming, and adding it to the policy agenda and as one of the items that the search committee would consider when assessing candidates for the position of director. In addition to cementing the triple bottom line approach to sustainability, this task force also identified three themes related to the association and libraries that will be discussed later in this paper: association and libraries as "inspiration and catalyst, as convenors and connectors, and as contributors to community resilience"

(p. 366). These recommendations were put into place, with the ALA adopting sustainability as a core value in 2019.

Since 2019, the research on sustainability within the field of library and information science sustainability has continued to grow both internationally and within the United States. This can be seen through actions such as when IFLA promoted the Environmental, Sustainability, and Libraries (ENSULIB) from Special Interest Group to Section (Sahavirta et al., 2021). IFLA also created the Glasgow Work Programme on Action for Climate Empowerment in 2021 to promote public awareness and participation in addressing climate change (McGuire 2022).

In the United States, the ALA has continued working towards achieving carbon neutral conference (ALA Council Committee on Sustainability et al., 2022b). They have also recently released *The National Climate Action Strategy for Libraries Implementation Guide* (Aldritch et al., 2024), which while still using the triple bottom line conceptualization to an extent, does not place quite as much emphasis on the concept. Though we'll discuss some aspects of this guide in a later section, its release in 2024 brings us up to the present day and serves as a good place to transition into the next section on sustainability practices currently occurring in libraries across the globe.

To prevent any chronological confusion, it is important to note that some of the research that we will discuss on global sustainability practices in the next section will have been completed

prior to the release of the National Climate Action Strategy that was just mentioned. Looking at the current ongoing research will help provide us with a better understanding of the practices that are currently being employed to promote sustainability; the research that is being conducted on the topic; the challenges identified by this research; and the recommendations made because of it. This will provide us with a better understanding of how sustainability is currently conceptualized within the field of LIS and aid our discussion of whether a different conceptualization will help us address some of the challenges that were identified. With that in mind, the next section will be geared towards promoting that understanding.

Sustainability in Libraries Around the World: Literature Review

By examining the research that LIS practitioners are currently conducting on the topic of sustainability at their respective institutions, the methods they are using to make their institutions more sustainable, and the challenges they are facing, it will be possible to gain a better understanding of how sustainability exists as a core value in practice and then reconceptualize it if necessary. As previously discussed, the triple bottom line is currently the dominant framework for understanding sustainability within the field of library and information science, which can be seen in the fact that it was used in almost all of the research examined in this section even in cases when it was not explicitly mentioned. The problems with this conceptualization will be discussed more in-depth later, but the first source we'll examine manages to avoid many of them by focusing

primarily on the environmental and social aspects of the triple bottom line when considering the role academic libraries play in promoting sustainability.

Hamad et al. (2024) give us our first look into how libraries are approaching sustainability across the globe in their paper on climate change literacy. They highlight that as "knowledge hubs for students, researchers, and faculty members" academic libraries not only provide "climate change information, data, and research," but also provide specific programs to encourage learning about the topic, events highlighting the issue, and opportunities for collaborations (p. 1). They seek to assess ongoing operations of, and necessary conditions for, academic libraries to promote climate literacy and determine what conditions they require, and what difficulties they face. To do this, they provided a questionnaire to 360 library staff in Jordan and received 203 responses.

Based on the results of this survey, Hamad et al. (2024) identified some current practices that were being conducted such as: building resources and the development of collections in order to eliminate information gaps related to climate literacy; workshops and events like lectures and panel discussions which can foster community engagement around promoting climate literacy; and collaborative engagement both intradepartmental and with local organizations in order to serve as "convening spaces" (p. 5). They also highlight some programs from other libraries, both public and academic, outside of Jordan in addition to the results from their survey. These programs

include a seed box and community garden in Estonia, planting workshops and development of green spaces in Israel, Morocco, Egypt, and Sudan, the distribution of 100,000 seed kits as part of a program in Ireland, and the Green Grove at a library in Singapore which contains an indoor garden, hydroponics showcase, and augmented reality trail (p. 6). The challenges identified by Hamad et al. (2024) include lack of funding and other resources, gaps in the expertise of staff, resistance to change and information overload on behalf of both students and staff. They recommend further green initiatives and professional development programs as well as additional longitudinal studies, collaborative research, and the development of concrete assessment metrics.

Regarding assessment metrics, we turn to an article that was published three years prior in which Missingham (2021) analyzes a case study from an academic library at an Australian university and compares it to various methodologies that have been used for assessment throughout the history of the field of library and information science in order to build an understanding of how the SDGs should be assessed. While the first study focused on the environmental and social aspects of the triple bottom line, this study is more focused on the *economic* and social aspects. This is in part because many of the methodologies currently used for assessment are directly tied to economic indicators.

Not only do assessments allow the universities within which academic libraries exist to compare themselves to one another on an international level, but the rankings that come from these assessments

potentially affect things such as funding levels and number of students who apply (p. 388). This has resulted in a focus on Return on Investment (ROI) and contingent valuation methodology which is a passive use assessment based on the estimated value of services provided by a library. Thankfully, it appears that this is starting to give way to assessments focused on either a value-in-use approach or Social Return on Investment (SRI), the former a more holistic approach focused on providing actual value to library users and the latter a mix of qualitative and quantitative assessments measuring outcomes determined by various stakeholders. (pp. 389-390). Based on her case study, Missingham (2021) found that using qualitative and quantitative methods within a framework based on the SDGs themselves as a multidimensional assessment tool is more effective than methodologies focused solely on the economic or social dimensions alone.

Aziz et al. (2024) publishing in Harf-o-Sukhan, the Urdu Research Journal, conducted a survey of academic library directors in Pakistan to determine their commitment, attitudes, and beliefs regarding how to implement the SDGs, make their libraries greener, identify any challenges they were facing, and determine what steps they have taken thus far. The directors identified a lack of funding and resources, inadequately trained staff, a lack of training on how to best institute environmentally friendly programs, and minimal awareness and understanding of green library initiatives among library users and staff as the primary difficulties. Library directors also highlighted insufficient infrastructure for implementing sustainability initiatives, while simultaneously, and unsurprisingly, ranking their

own commitment to promoting environmental sustainability. The authors advocate for building a culture of awareness about green practices and supporting community involvement and engaging all stakeholders through initiatives and campaigns consisting of lectures, workshops, and events all designed to promote environmental education.

Despite the self-proclaimed dedication to sustainability of library directors in the previous study, there have been several studies indicating that the actions taken by leadership have been lacking. Kang (2020) described the situation among library directors in China as "strong consciousness, weak action" (p. 387). Tribelhorn (2024) discovered that in the United States only one out of the fifteen libraries that she surveyed had a dedicated leadership committee and that leadership often seemed to lack direction (p. 7). She states, however, that the buy-in of leadership is absolutely crucial to the process of promoting sustainability, and highlights some examples of successful sustainability programs on university campuses in the United States including: the formation of a Library Environmental Committee at Michigan State University which was active in projects focusing on energy conservation, waste reduction, and recycling programs; the creation of a compost collection program at Oregon State University created to minimize the amount of greenhouse gas emissions caused by food waste; a sustainable information literacy course that was offered to first-year students at the University of Calgary in Canada; and a focus on sustainable building design at universities in China. According to Tribelhorn (2024), programs such as these are not without problems, though, including the lack of

training provided to staff and again the lack of concrete assessment tools. She recommends a holistic approach to integrating sustainability into academic libraries, including all stakeholders, and incorporating sustainability into the mission statement and policies of the academic library.

After reviewing the role of staff and management, it is beneficial next to examine what role other stakeholders might play. Tanzin and Atikuzzaman (2024) conducted a survey of academic library users in Bangladesh and found that while most users were aware of sustainability, only a small percentage viewed their library as environmentally friendly. Another key finding was that users recognized that a more environmentally sustainable library would result in better health outcomes. They recommended comprehensive teaching initiatives focused on sustainability including workshops and outreach to the broader community (pp. 6-9). They also recommend conducting assessments regularly as they found when students were better educated on sustainable practices, they better understood the benefits and difficulties involved in green practices.

Also studying students, King (2024) conducted a case study on the Canadian undergraduates that she was teaching which she uses to highlight some pedagogical approaches that academic librarians can take to contribute to meeting the SDGs by teaching sustainability through the lens of information literacy and information behavior. She highlights how the Association of College and Research Libraries (ACRL) framework for information literacy can be beneficial for

teaching sustainability. This is because the framework contains "not just skills, but attitudes, ethics, ways of thinking, being, and approaching situations" (p. 733).

She recommends that students complete assessments on their level of sustainability after completing community-engaged and problem-solving research on green issues as a way of developing the additional elements the framework provides (pp. 732-734). King (2024) also highlights the benefits of fighting climate misinformation in promoting sustainability and how this can serve to demonstrate the concept of information behavior to students. Ultimately, though, she believes one of the most important way that academic libraries can help promote sustainability is to have students build connections with the community.

Focusing on digital librarianship in Nigeria, Okuonghae and Achugbue (2022) recommend promoting open access technologies to make practices more sustainable. Regrettably, though, the respondents to their survey indicated that the focus on sustainability in Nigerian digital libraries is low, and point to a lack of funding, a lack of clear policies, and a lack of infrastructure as the primary causes.

Also conducting research in Nigeria, Igbinovia (2021) conducted a survey of librarians to determine the implications that cross-disciplinary research might have on meeting the SDGs. As would be expected, librarians understand that they are especially prepared to help with transdisciplinary research, and they recognize that this type of research is critical to meeting sustainable development goals.

Unfortunately, there is the perception that this type of research is less likely to receive funding than research of a narrower scope, and the findings are often less likely to be implemented. Igbinovia (2021) advises librarians to advocate for more funding transdisciplinary research and urges the regulatory bodies for librarians to promote this type of research.

In India, Hasan and Panda (2023) identify the features of a green library as having renewable energy integration, waste reduction and recycling, water conservation, responsible procurement, environmental literacy, and community engagement, and the roles of a green library as environmental leadership, knowledge dissemination, community education, sustainable resource management, and advocacy and inspiration. The green library movement in India uses an assessment tool known as the Green Rating for Integrated Habitat Assessment (GRIHA), however, this assessment is focused predominantly on the building that the library is housed in and is used throughout the design and construction process. They highlight specific libraries with programs such as rainwater harvesting, solar power use, and energy efficient lighting. Some of these libraries also have dedicated collections focused on the topic and host "workshops, seminars, and educational programs on topics such as organic farming, waste management, and eco-friendly living" (p. 10).

In a survey of 24 public libraries in the United States, Devine and Appleton (2022) found that: all 24 libraries promoted information related to sustainability such as books and media and held workshops

on sustainable food provision, 20 out of 24 highlighted environmental issues through the use of "theme days or weeks," 18 had expanded the range of items available for lending, 17 held DIY workshops, 16 provided some sort of public transportation access, 15 had started prioritizing digital aspects of their collections, 15 had hosted repair days, the same number had begun lending out energy reduction equipment, 8 out of 24 provided a collection point for unwanted media, the same number held upcycling workshops, 7 out of 24 held workshops on zero waste practices (pp. 159-160).

Examining the many ways that libraries across the world are promoting environmental sustainability, and understanding the research being conducted within the field of LIS on the topic helps provide a window into the progress that is being made. By looking at these practices after learning the history of sustainability within the field we can see how the triple bottom line framework is the primary way of conceptualizing sustainability. Before we fully start tackling the issues with the triple bottom line and the problems that exist with the Sustainable Development Goals, let's look into how library and information science is critical to promoting environmental sustainability, and why promoting environmental sustainability is fundamental to the practice of library and information science.

Why LIS is Integral to Sustainability and Sustainability is Integral to LIS

The importance of LIS to Sustainability

As demonstrated in the previous sections, there are many reasons why the field of library and information science is uniquely qualified

to promote environmental sustainability and help handle the issues caused by climate change. One of the main reasons that LIS is ideally suited for addressing the problem of climate change is because at its core this problem is an information problem. Despite near total scientific consensus on anthropogenic climate change, only two out of three Americans and a little over three out of four Europeans believe that the effects of climate change are caused by human activity (Bogert et al., 2023). We can help increase that number by promoting literacy of issues like climate change and environmental sustainability. In addition to serving as an information resources for members of our communities regarding environmental sustainability, we also perform the same functions for policymakers and political decision-makers.

Appleton and Wooley (2023) state that academic libraries have the "skills and resources to help governments, institutions and individuals communicate, organize, structure, and understand information and knowledge pertaining to sustainability and sustainable development," but this statement holds true to the broader field of LIS as well (p. 119). Our relationship with information also means we are uniquely qualified to help fight against climate misinformation as discussed in the previous section. The transdisciplinary nature of our field also gives us an advantage when dealing with issues related to climate change and allows us to fulfill many different roles when attempting to solve the problem. Ajani et al. (2024) have broken down the important roles that libraries can play in promoting sustainability into the following categories: education and awareness;

resource hubs; community engagement; green building practices; and advocacy and partnerships (p. 62).

Bakare and Bakare (2023) affirm that as a discipline, LIS "has always been saddled with the responsibility of sustainability, which is laced with the organization, classification, accessibility, and transference of human knowledge from one generation to the other" (p.3). This is part of our fundamental mission as a field of study.

The importance of Sustainability to LIS

Sustainability was chosen as a core value of librarianship because the concept is inherently related to traditional practices associated with the profession. A focus on environmental sustainability or green librarianship is not an example of mission-creep, but rather one of the foundational pillars on which the entire discipline is built—preserving information and enriching our communities. Not only is environmental sustainability fundamentally aligned with what it means to a librarian, but the field of library and information science is also able to provide the best framework for addressing issues related to environmental sustainability.

The two concepts are inextricably linked and given the existential risks that climate change poses to humanity, it is critical that libraries and LIS practitioners rise to the occasion. To do so, it may be beneficial if we fundamentally re-examine how we view these two concepts, but first it is important to understand exactly how deep the links between environmental sustainability and library and information science go.

One way to understand how closely related environmental sustainability is to the field of library and information is by examining an example of research that illustrates the depths of these links. A fitting example is that of the study of palm-leaf manuscripts (PLM) in the parts of Northern Thailand that were historically known as the Lanna Kingdom (Jarusawat & Cox, 2023). Traditionally PLM's have been used as a repository of knowledge and wisdom such as medicine, local folklore, literature, astrology, and history, and were written in the Lanna Tham alphabet, which was once considered sacred, but is currently threatened due to the predominance of the Thai language. This crucial piece of cultural heritage is also at risk of damage and destruction due to humidity, insect attacks, neglect, and biodegradation (p. 133).

Though many people reading this might think digitization would be the best method of preserving this resource, but in practice digitizing these artifacts still left them inaccessible to most community members in the three villages discussed in this study. Instead, by working with the community, LIS practitioners were able to help develop a sustainable solution based on community involvement and participation. Members of each of the three villages worked together to maintain the resource, and the program the researchers helped to create together with the community members continued after the researchers left.

This example provides a wonderful illustration of how environmental sustainability and the field of library and information

science can work together to create optimal solutions. In this case the community had a fundamental information need that was linked to a fragile, shared resource. Rather than seeking to manage that resource for them, or simply digitizing it and focusing on the technological aspect, LIS practitioners worked with the stakeholders to find a solution that would work best and allow the community to manage this important resource.

Beyond just this pleasing example, library and information science is critical to environmental sustainability because libraries, as Kosciejew (2020) describes them, are "motors of change driving development" (p. 328). Change is occurring due to anthropogenic climate change whether libraries are serving as the motors or not. By prioritizing libraries of all types, we will help make sure that these changes are being driven towards positive developments which benefit surrounding communities and are inclusive and socially responsible.

The debate as to whether libraries have a duty to serve greater society through the demonstration of socially responsible ideals can at least partially be traced back to the arguments about neutrality that happened during the 1960's and 1970's after Lyndon B. Johnson promoted the Library Services and Construction Act (LSCA) in 1964 (Racelis, 2018). These debates eventually helped spur the creation of the ALA's Social Responsibilities Round Table (SRRT), which eventually helped developed the ALA's Policy 61, also known as the policy on "Library Services for the Poor." According to Guivarch et al. (2021) at the International Monetary Fund (IMF), not only do the effects of

climate change have a disproportionate impact on those already experiencing poverty, but they also will likely push up to 135 million more people into poverty by 2030 (p.1). This helps make it clear that not only does promoting environmental sustainability tie into the historical social responsibility of libraries helping to provide for those experiencing poverty, but also that by addressing this issue we could potentially help mitigate the amount of people who will experience poverty because of climate change.

Though it may seem that by describing how a focus on environmental sustainability and addressing climate change has the potential to alleviate poverty, I am endorsing the triple bottom line framework. This is not the case. I only want to suggest that a focus on promoting environmental sustainability is no different from any other social justice focused aspect of library and information science. This is the same point that Atton was making 30 years ago (Atton, 1993).

Problems with the Current Conceptualization of Sustainability

Though some LIS researchers, such as Kamińska et al. (2022) and Aytac (2017), state that the concept of environmental sustainability originated with Thomas Malthus, the Nobel-prize-winning work of Elinor Ostrom has proven that the idea of managing common-pool resources is much older than the 18th century. Though it doesn't appear to necessarily be a widespread belief, highlighting Malthus as the intellectual forefather of sustainability is still problematic given the atrocious acts that have been committed in fear of a Malthusian

Catastrophe. So, if we are seeking to reconceptualize the idea of sustainability, it is necessary to address misconceptions such as this before we move forward.

The primary issue with using the triple bottom line as the sole framework for approaching environmental sustainability within the field of LIS is that by focusing on the economic impacts, we are inevitably undermining the gains we can make on the environmental and social axes. “Rapid economic development has led to resource shortages and environmental pollution” (Li and Yang, 2023, p. 424). Libraries by their very nature have the capacity to promote economic benefits. That, however, is not their purpose. As civic institutions, libraries do not exist to turn a profit. The current economic system is predicated on the unsustainable notion of infinite growth and by highlighting the economic as a metric for measuring environmental sustainability, we are perpetuating the very system that is harming the environment.

Even the creator of the triple bottom line, John Elkington, has stated that the concept needs to be reworked. In an essay for the Harvard Business Review in 2018, he stated that “success or failure on sustainability goals cannot be measured only in terms of profit and loss” (para. 5). Yet in the field of library and information science, we are still clinging to the idea that economic growth is one of the three pillars of environmental sustainability. While I understand that funding is an issue, and that as institutions we need to remain solvent. This does not mean that we need to incorporate financial

measures into how we think about environmental sustainability. Doing so simply results in a kind of secondhand greenwashing.

We must move forward and begin rethinking how we conceptualize the idea of environmental sustainability. Climate change is an urgent concern and as it progresses it will have negative effects on the communities we serve. When the consequences of anthropogenic climate change affect our communities, we need to be there to help them through it in a way that doesn't just perpetuate the same system that caused them harm. To do this we need to change how we think and talk about sustainability. The Sustainable Development Goals are good objectives, but even they have their problems.

One of the issues with the current conceptualization of sustainability centered around the Sustainable Development Goals is that environmental issues are not given the necessary weight given the stakes of ecological collapse caused by climate change. An example of this can be seen in an online survey conducted by OCLC, a nonprofit library cooperative, that was given to library staff around the world to determine how they viewed the progress their libraries were making towards meeting the SDGs. The organization selected the five goals on which they thought libraries might have the greatest effect: Quality Education, Decent Work and Economic Growth, Reduced Inequalities, Peace, Justice and Strong Institutions, and Partnerships for the Goals—all of which are good enough in their own right, but none of these are related to ecological issues (p. 270, Connaway et al., 2023).

I'm not arguing that we need to abandon the SDGs entirely. As shown in the literature review, good work has been done and that should be recognized. The SDGs provide an important international framework to begin addressing the issue. However, they are not enough to fix the issue on their own. We should continue our involvement in solving this problem using international organizations like IFLA, but we also need to radically reshape the paradigms we use to think about how we interact with the environment.

It may sound alarmist, but it is not inconceivable to think that the effects of climate change will lead to the collapse of our current global financial system. If this occurs, how will we react? It is impossible to predict exactly what kind of catastrophe will occur, and because of this it is hard to know exactly what our response will be. That does not mean we should just continue with the status quo, though. If we rethink our relationship with environmental sustainability and utilize a different framework that does not rely on economic or financial metrics, we will be better prepared to help our communities persevere and rebuild something better.

Towards a New Conceptualization of Sustainability within LIS

How should we think about the idea of environmental sustainability without the triple bottom line? Brunvand (2020) provides us with one possible model. In discussing the Anthropocene, she provides us with three stories libraries tell about themselves: the status quo, which she defines as a "techno-optimist" story in which our globalized society can somehow solve the problem of climate

change, or continue on with our level of consumption; a disaster scenario in which things collapse and the library serves as a hub to help provide support to a community through both materials and information sources; and a scenario where we are actually able to help promote environmental sustainability and provide our communities with the tools they need to transition to a way of life that is not actively contributing to ecological collapse. She states that libraries are telling all three stories simultaneously while making a strong argument for the need for libraries to re-localize their collections and the services they offer.

When conceptualizing environmental sustainability, we should move away from the triple bottom line, and instead take a community-engaged focus on both the local and the global. Brunvand (2020) uses the mathematical concept of nodes to describe how libraries interact with one another and their communities. This is a great way to conceptualize the network of libraries and our interactions, but the more important points are that we must connect and interact with our local communities and be intentional about the narratives we are promoting. Brunvand (2020) states that because "the word "local" has no formal definition makes it particularly adaptable to inclusionary storytelling" (p. 11). When we focus on the economic aspect of libraries the story we are telling is more like an echo of the status quo, and as a result we are simply perpetuating a system that is inherently exclusionary.

As discussed in the section on the history of the field, the argument against focusing on the economic aspects of environmental sustainability is not new. This is the same point that was made by Atton (1993) and Spink (1999). It is time that we begin to tell a different story about how libraries promote sustainability. When the ALA Special Task Force on Sustainability issued their first recommendations, they mentioned that libraries can serve as "inspiration and catalyst, as convenors and connectors, and as contributors to community resilience" (p. 366, Tanner et Al., 2019).

These concepts are inspirational and work perfectly to describe how LIS can help promote environmental sustainability. However, when we connect these concepts with the triple bottom line focus on economics, the narrative that we are promoting. Are we inspiring people to come up with an extractive idea that they can then use to profit from their community? Are we convening and connecting with wealth who want to perpetuate the current system or re-establish their dominance in the market? While these may be strawman arguments focused solely on the negative possibilities, the point remains that we need to be aware of how the narrative we promote around the concept of environmental sustainability can lead to negative externalities.

If we reconceptualize how we talk about and think about environmental sustainability, we will not only be more helpful to our communities in the case of collapse, but we will also promote the kind of changes that may result in us bettering the ecological community. We need to focus on community-engaged activities on a local scale, while also recognizing that we are nodes within a larger ecosystem. In

the Planetary Health Earth-Commission's report on "A just world on a safe planet" Gupta et Al. (2024) advise that we are going to need to make radical changes to society and governance if we want to achieve the goal of Earth-system justice. While it is not our job to make these changes ourselves, at the very least we need to adjust the way we think about environmental sustainability.

I personally believe that the best way we can promote environmental sustainability is by focusing on our localized communities and building community-engaged practices to protect the ecological community as well as the human community that we live in, while at the same time reaching out and creating a global network of LIS professionals, sustainability scholars, activists willing to do the work to help change society to be a more sustainable place. Because local is such a nebulous concept, if we were to think on a galactic scale, or even the scale of our solar system, local would incorporate the entire planet. What is stopping us from telling an "inclusionary story" like Brunvand (2022) suggests that includes humanity.

I also readily admit that I am not the most knowledgeable on the topic of sustainability. I'm currently just a master's student, and I recognize and respect the scholars in this field who have so much more experience than I do. I'm sure there are those who could provide a better more cohesive way for us to conceptualize environmental sustainability. My argument still stands that we need to move away from the triple bottom line. We need to look forward, and even though

we don’t know what will happen in the future, we need to make sure that the narrative we are creating around sustainability does not simply promote the status quo and rebuild the same unjust system that promulgated the climate catastrophes we will face. We need to make sure that it does not encourage exclusionary actions where the strong are able to exploit the weak for profit. We need to build a framework for how we think about sustainability and our relationship with the environment and come up with a narrative that will help change the world into the type of future that we want to he.

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