Assessing Environmental Sustainability in Canadian University Libraries' Strategic Plans

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Introduction

Floods, famine, fires: fallout from the planet's increasing temperature makes the climate crisis a reality that affects everyone, with the most vulnerable populations disproportionately affected.[1] Academic libraries cause carbon emissions that contribute to the climate crisis through infrastructure, energy and water use, the purchasing of materials and resources, printing, and so on. While the climate crisis is undoubtedly a dire situation, there is still room for action to mitigate the worst potential outcomes.

The climate crisis has recently been reflected in the strategic priorities of large library organizations. For example, the American Library Association (ALA) has partnered with the Sustainable Libraries Institute to create a Climate Action Strategy that will provide guidance regarding climate change mitigation and adaptation, as well as climate justice work.[2] In the Canadian context where this study was undertaken, the Canadian Federation of Library Associations (CFLA) instigated a Climate Action Committee in November 2023, composed of representatives from public and academic libraries in Canada (CFLA 2023).[3]

Strategic plans in academic libraries are designed to provide direction and measurable goals which are essential to systematically furthering priorities. By exploring strategic plans of Canadian university libraries, our study provides an analysis of current strategic priorities around environmental sustainability and language which can be used to inform future strategic planning regarding climate action initiatives in academic libraries. The goal of this study is to explore the extent to which environmental sustainability is present in the strategic plans of Canadian university libraries, and to analyze *how* it is being included, when it is included at all.

Literature Review

Higher Education and Environmentally Sustainability Strategic Planning

In the broader higher education context, in 2015, Vaughter et al. conducted a survey of the presence of sustainability policies (e.g. policies, plans or mandates) on Canadian campuses.[4] Some of their high-level findings included that the likelihood of an institution having an environmental policy increased with the size of the city in which the institution is located, and that there appeared to be a strong provincial influence in the likelihood an institution would have environmental policies (e.g. British Columbia's Greenhouse Gas Emissions Target Act or the CÉGEP Vert program in Quebec).

Similarly, a content analysis study of the strategic plans of 50 Canadian higher education institutes (HEIs) by Bieler and McKenzie in 2017 found three different characteristics of responses present: "accommodative" (defined where sustainability is one of many priorities in one or two domains), "reformative" (where sustainability is

present in a few domains), or "progressive" (where sustainability is present in 4-5 domains with greater specificity).[5]

In a more recent systematic review of environmental sustainability management in higher education institutes, Roos and Guenther found that HEIs pursue "operational pattern[s] with little consideration on strategic approaches."[6] One of the outcomes of the study was to propose a shift from operational activities to a more strategic orientation in order to facilitate a more holistic implementation of sustainability management.

Academic Libraries and Environmentally Sustainable Strategic Planning

The earliest mention of incorporating environmental sustainability into an academic library's strategic plan we can find in the literature is found in 2013 at the Chinese University of Hong Kong (CUHK) Library.[7] Jones and Wong note that in response to broader institutional strides towards environmentally sustainable initiatives, CUHK Library incorporated sustainability as one of five strategic themes, with a specific objective of "progress towards environmental sustainability wherever possible."[8] The article goes on to discuss "actions taken by the Library as a result of its own strategic plan," which include initiatives to raise awareness, such as sustainability as a standing item on staff agendas, monitoring statistics related to water and electricity consumption, a rooftop vegetable garden, reducing printing, e-preferred collection policies, and prioritizing "green" facility choices.[9] In 2021, CUHK Library created a new strategic plan that mirrored the broader CUHK institutional commitment to the United Nations Sustainable Development Goals (UN SDGs), as outlined by Ma and Ko in their 2022 case study mapping CUHK Library's activities to particular UN SDGs.[10] Similarly, one of the findings of Thorpe and Gunton's case study regarding mapping academic libraries activities to UN SDGs was a call to further integrate principles underlying the UN SDGs (which technically includes goal 13, climate action) into Australian university strategies and plans.[11]

More recently, in a survey distributed to ALA-Connect, ALA-SustainRT, and contributors to Pun and Shaffer's 2019 *ACRL's The Sustainable Library Cookbook*, Sarah Triblehorn found only 3 participants (23% of respondents, of a particularly climate-action oriented group of participants) indicated that sustainability was included in the mission statement of their library: "Participant responses generally concurred that there was generally no direct measurement of sustainability within their libraries."[12] One of Triblehorn's conclusions was for sustainability processes and objectives to be reflected through strategic plans and implemented by dedicated committees, which is in accordance with the aforementioned proposal by Roos and Guenther pertaining to higher education writ large.

In the Canadian academic library context, Slattery and Webb found that only 11 out of Canadian Association of Research Libraries' 31 member institutions had environmental climate-related content on their website, policies, or strategic plans; and that further, only 6 of those 11 assessed sustainability indicators to monitor progress.[13]

Methodology

The present study analyzed language that was thematically environmentally sustainable in nature found in Canadian university library strategic plans in order to assess to what degree

Canadian university libraries are integrating sustainability and climate action into their strategic objectives.

Our sample of university libraries were selected based on institutional membership with the Canadian Research Knowledge Network (CRKN), a consortium of Canadian degree-granting colleges, universities, and galleries, libraries, archives, and museum sector institutions.[14] Selecting from CRKN institutions ensures coverage from across Canada and allowed us to retrieve consistent full-time equivalent (FTE) data. Our inclusion criteria for analysis stipulated that the institution had to be a university with an FTE exceeding 1000 and have a publicly available strategic plan that expired no earlier than 2023 at the time of analysis (February 2024). This excluded smaller specialized schools, and those who had not updated their strategic plans following the height of the COVID-19 pandemic, therefore leaving us with a more contextually uniform group from which to draw comparisons.

Out of 63 universities with an FTE exceeding 1000, 30 had publicly available strategic plans that met our date criteria. These 30 strategic plans underwent screening for any mention of environmental sustainability, of which 20 did. The resulting corpus of 20 were then assessed using conceptual content analysis.

This study uses conceptual content analysis to analyze the textual data by identifying key concepts and tracking their frequency of use. The methodology is broken down into 6 distinct parts: selecting the unit/level of analysis, sampling, developing coding rules, reducing the data, coding the text, and analyzing the results.[15] Analysis occurred at the word/word sense level, being as specific as possible while leaving room for ambiguous uses of "sustainability." While we did have a predetermined set of categories to code for, adopting a flexible coding methodology allowed for possible variations in words or word senses used as coding progressed. The nine coded words were: sustainab*, UN SDGs (United Nations Sustainable Development Goals), ecology, climate change/climate crisis, environment*, ecosystem, eco-friendly, green, and stewardship.

Coding was performed for frequency, guided by established rules. Words with a common root and meaning were coded together, regardless of different suffixes or word endings. For instance, terms like "sustainable" were coded under "sustainability," while words like ecology and ecosystem were coded separately because despite their shared affix, the meaning of the word differs. One notable exception to this rule is that the "sustainable" in UN SDGs was not coded as "sustainability" since the UN SDGs are a distinct concept. To account for French strategic plans, the closest possible translation was used to allow comparison across languages. Surrounding words were put into a content box to keep track of associated uses, which added additional context to our analysis.

Additionally, we coded for the location of concepts to determine where university libraries integrate sustainability into their strategic plans. For example, words found in the mission, value, or purpose sections of strategic plans counted as "guiding principle," while concepts found in a goal or sub-goal all counted towards "goals." When sustainable concepts were regularly found throughout the document, they were deemed "fully integrated." Coding was done by hand by both researchers individually, and compared to

determine internal consistency. In cases where there were disparities, we went back and recounted until we reached agreement.

Results

Note that the figures in Table 1 are framed within the context of the 20 strategic plan documents that were conceptually coded, e.g. the 20 documents that bore any mention of environmental sustainability. A separate framing with a wider lens is also possible had we calculated the below figures in the context of the 30 university libraries with active (e.g. unexpired) strategic plans, or the 63 university libraries that met the requirement of an FTE of greater than 1000 students. Ultimately, we chose the narrowest lens so that we would be making comparisons on equal terms.

Province	**Plans with ES**	**Total institutions with updated plans**
Ontario	7	10
Manitoba	0	3
Saskatchewan	2	2
Alberta	1	2
Quebec	4	6
British Columbia	3	6
Nova Scotia	2	2
Prince Edward Island	1	1

Table 1. Geographic distribution of updated strategic plans and share of which contain an element of environmental sustainability.

Location of Environmental Sustainability within Strategic Plan Document

Out of the 20 Canadian university library strategic plans analyzed, environmental sustainability (ES) appeared with varying prominence. Twelve plans (60%) included ES as a distinct goal, while 14 (70%) positioned ES as a guiding principle. Notably, only three plans (15%) integrated ES throughout the entire strategic document, embedding it across multiple goals and sections (see Figure 1). In six cases (30%), ES was both a standalone goal and a guiding principle. Only two plans (10%), York University Libraries and University of Regina's Archer Library exhibited comprehensive integration of ES, featuring it as a goal unto itself, within other goals, and as a guiding principle.[16] [17] Six plans (30%) only mentioned sustainability under goals, and seven plans (35%) only included sustainability as a guiding principle (see Figure 2).

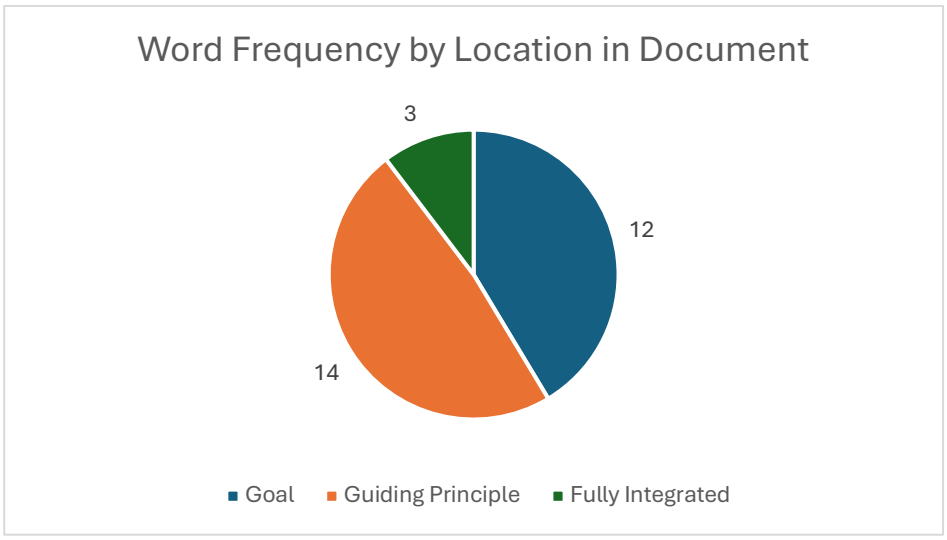

Figure 1. Number of plans sorted by whether the words related to environmental sustainability were part of strategic goals, guiding principles, or fully integrated throughout the strategic plan document.

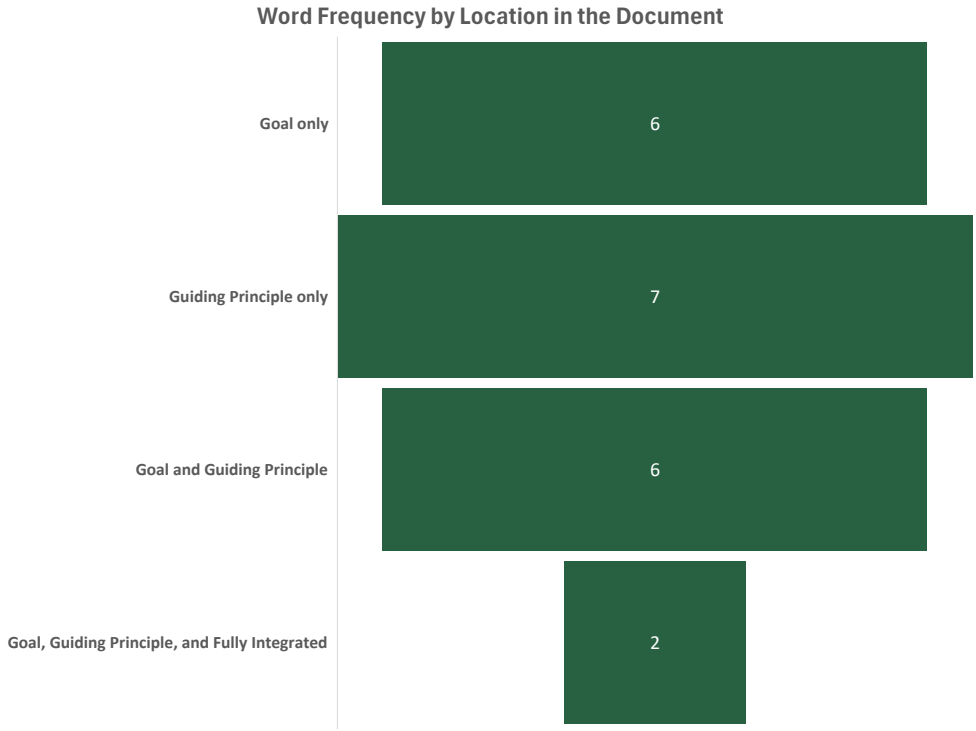

Figure 2. Number of strategic plans that had words related to environmental sustainability as a goal, guiding principle, as both a goal and guiding principle, or as goal, guiding principle, and fully integrated throughout the document.

Frequency

The frequency with which environmentally sustainable coded words appeared in the strategic plans was highly variable (see Figure 3). In 14 plans (70%), the coded words appeared only 1 to 5 times, three plans (15%) mentioned the coded words between 6 to 10 times, and another three (15%) used the coded words 11 to 15 times. The plans with the highest frequency (14 and 15 mentions) were also the ones where ES was fully integrated across goals, guiding principles, and specific objectives. As expected, these plans were the most explicit and detailed in addressing sustainability. Conversely, plans with lower frequencies of coded words (1-4 mentions) tended to use sustainability-related language more vaguely. For example, the University of Alberta Library, who had one instance of a coded word, used sustainability in the broad sense in their goal to "[f]ocus on sustainability as we transform our services, operations, and infrastructure in adapting to changing realities faced by the University of Alberta and the academy."[18]

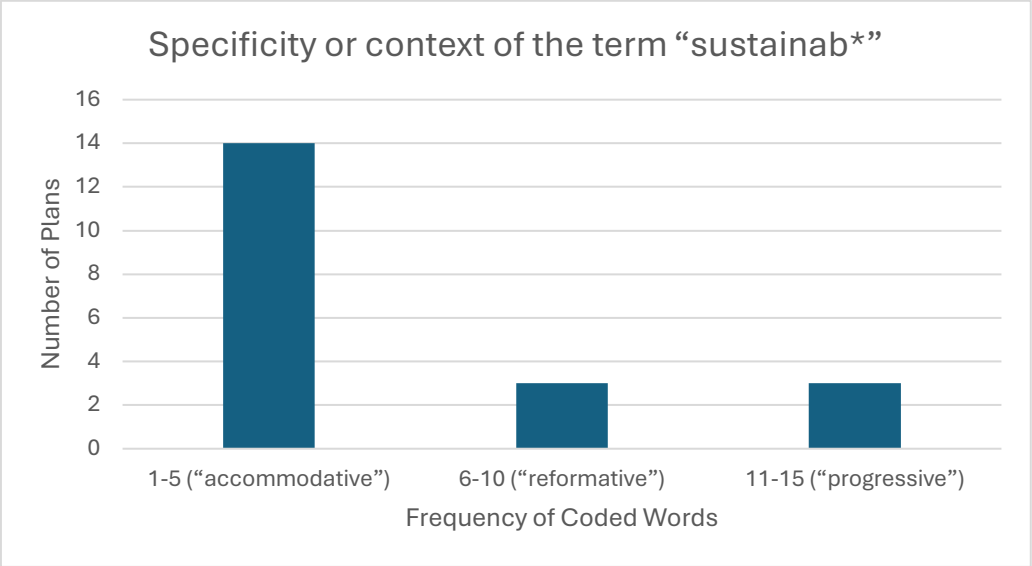

Figure 3. The frequency with which environmentally sustainable words occurred in strategic planning documents, mapped to the "accommodative," "reformative," and "progressive" terminology posed by Bieler and McKenzie[19].

When examining the specific coded words used across strategic plans, the term "sustainab*" was the most frequently used with 45 instances recorded across all documents (see Figure 4). However, in many cases, the usage reflected broader meanings such as fiscal, social, or cultural sustainability, or other forms of long-term viability. The second most frequently used code was "environment" with 18 instances, followed by climate/climate change with a frequency of 16. Despite having 8 mentions, the term "UN SDGs" was used in only two strategic plans with one mention from Queen's University Library and seven from York University Libraries.[20] [21]The terms "eco-friendly" (6 mentions), "stewardship" (4 mentions), "ecology" (2 mentions), "ecosystem" (1 mention), and "green" (1 mention).

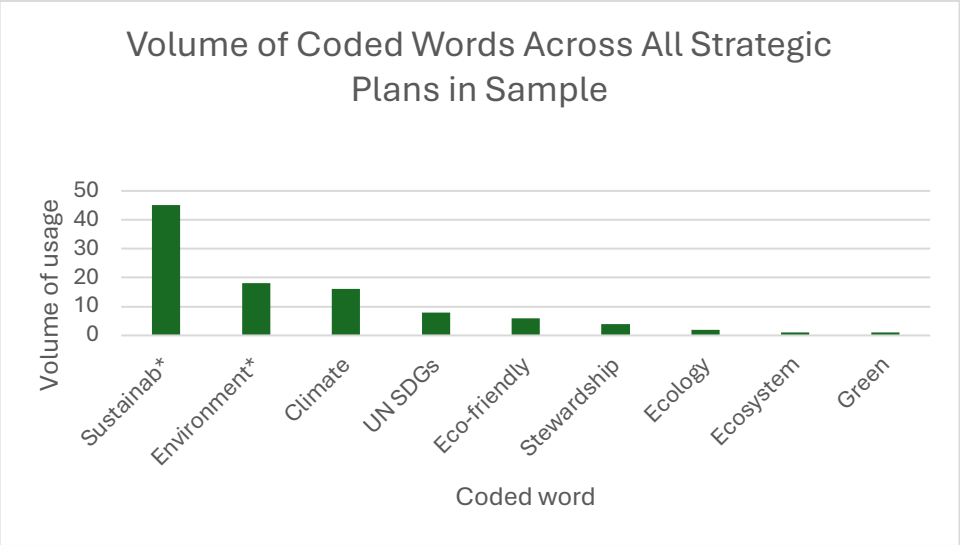

Figure 4. The volume of which each coded word appeared across the entire sample.

Out of the 20 plans, 7 (35%) spoke exclusively about environmental sustainability, while another 7 (35%) combined both environmental and broad, non-specific sustainability language (see Figure 5). The remaining 6 plans (30%) mentioned the coded words only in broad terms, without direct reference to environmental issues. This distribution suggests that while there is a growing awareness of sustainability, a significant portion of academic libraries still approach the concept in a generalized manner, which may dilute the focus on environmental issues. It seems that many institutions may still be grappling with how to operationalize and communicate environmental sustainability in specific, measurable ways.

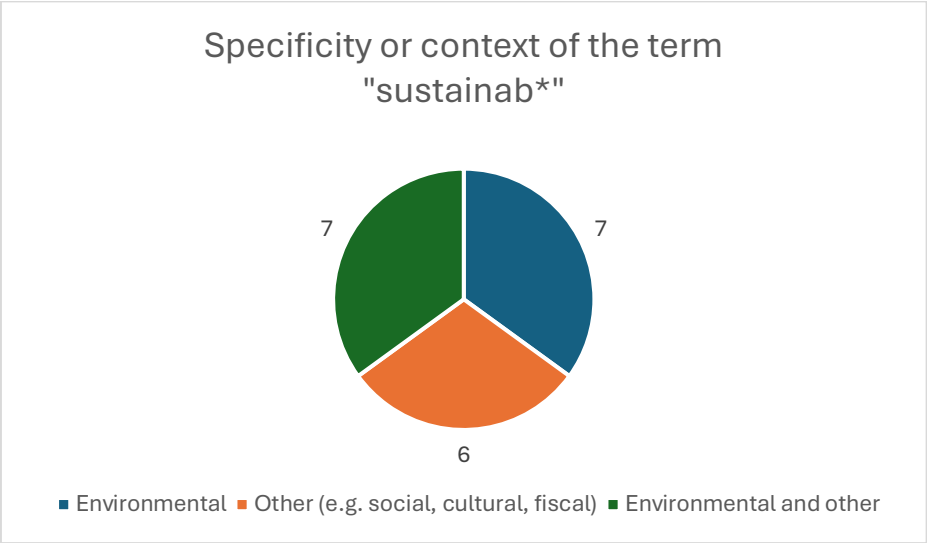

Figure 5. A chart depicting the context of sustainability related words in strategic planning documents.

The frequency data reveals that while “sustainab*” is a common theme in the strategic plans, its broad usage often extends beyond environmental issues. This vague application of the term may signal a need for more precise language in future strategic plans to ensure that environmental sustainability is distinctly recognized and prioritized. The lower frequency of direct environmental terms like “environment,” “climate change,” and “eco-friendly” suggests that although these concepts are present, they are not yet at the forefront of strategic planning in most academic libraries.

Associated Words and Context

To further explore how environmental sustainability is contextualized within the strategic plans, the words surrounding the coded words were analyzed for frequency (see Table 2). A collocation window of five words on either side of the coded word keeps the proximity close given the succinct nature of strategic plan language. Stopwords such as “the” or “and” were removed to keep the focus on more meaningful words. The following table outlines the most frequently used language:

Position	**Surrounding Word**	**Frequency**
Preceding	focus	9
	areas	7
	ensure	6
	environment	6
	library	5
Following	action	13
	library	8
	climate	6
	practices	6
	impact	5

Table 2. Frequency of surrounding words.

The words “action,” “climate,” “practices,” and “impact” suggest that libraries are looking at exploring tangible initiatives. The prominence of “action” highlights a desire for practical implementation, aligning with findings that stress the need for measurable goals in sustainability efforts. The inclusion of “impact” underscores the intent to assess the effectiveness of initiatives, signaling a move toward more data-driven approaches. Conversely, the words “focus” and “ensure” suggest a desire to prioritize sustainability

more than perhaps it had been previously. The presence of "climate," "environment," and "areas" on this list stem from the University of Regina's strategic plan where "Areas of Focus: Environment & Climate Action" was repeated five times under various goals.[22] Due to the small sample size and the wide variety of strategic plan formats, outliers, such as The University of Regina, can have a large impact on frequency counts. Regardless, institutions reviewing their strategic plans should consider action-oriented language in conjunction with measurable goals to ensure that sustainability is not an after-thought in their strategic planning.

Discussion

Our findings suggest that while environmental sustainability is modestly represented within academic library strategic planning in Canada, it is often treated as a peripheral or abstract concept rather than a fully integrated priority. The seven strategic plans that listed sustainability exclusively under guiding principles were vague and broad in nature. Additionally, the lack of actionable goals makes it difficult to understand how sustainability is measured or considered within the context of the strategic goals. The limited number of plans where ES is integrated into multiple goals indicates that comprehensive commitment to sustainability may still be in its early stages for many institutions. University of Regina's Dr. John Archer Library and York University Libraries are good exemplars of strategic plans that had environmental sustainability "fully integrated" into the document in our coding system, or "progressive" in the parlance of Bieler and McKenzie.[23]

Our original plan for analysis was to also include a facet exploring the relation between prevalence of environmentally sustainable themed strategic plans and geographic region to compare our results to those of Vaughter et al.[24] This plan was foiled, however, by the fact that only 30 of 63 university libraries analyzed even had current strategic plans, let alone an element of ES (refer to Figure 1). While this data is not complete enough to offer a fulsome analysis on the geographic component as we had intended, we can infer that an initial, foundational recommendation from this work is for academic libraries to invest in a strategic planning process to establish and communicate the priorities of the library to stakeholders, and to direct further action.

As a further recommendation to libraries with a strategic plan that did not entail a component of ES: if environmental sustainability is not identified as a priority for university libraries, then any changes or projects towards environmental sustainability may be at risk of being piecemeal and under-resourced. As Roos and Guenther note, strategic plans help to direct the focus and resources of university libraries, and as such specific, actionable plans that roadmap action and assess its efficacy over time are essential.[25]

Here we must acknowledge that this study is limited in that it does not represent the entirety of climate action initiatives in academic libraries in Canada. There are climate action initiatives in progress at academic libraries in Canada that are not represented in this data, either because those university libraries do not have a strategic plan, or they do but it is not publicly available, or the climate action initiatives are done as part of a library staff initiative but haven't been reflected in strategic planning. Another way in which the conclusions of this study may be limited is that while climate action and environmental

sustainability may have been a part of an academic library's plan, the plan itself is not necessarily indicative of the action that followed.

Thus, one possible future direction of research would be evaluating annual reports from the included university libraries' to measure the impact of the strategic plans that did have an environmentally sustainable focus. The findings of such a follow-up may help guide best practices for drafting strategic plans with environmental sustainability, as there may be some correlation to be found between the degree to which sustainability was a guiding principle, a goal unto itself, or interwoven through the document, and the associated outcomes. An alternate avenue for exploration would be to compare university libraries' strategic plans to their broader institutional strategic plans to analyze any thematic throughlines or influence that may be visible related to the theme of sustainability.

Another separate direction for future research based on this project would be to analyze the original dataset (i.e. current strategic plan documents of Canadian university libraries) for other themes, such as mentions of decolonization and equity, for example.

Conclusion

We hope that environmental sustainability will be considered a priority for strategic planning for all libraries going forward, and formally documenting the ways in which this is currently being done in this paper may help to add to the scholarly discourse on the topic and guide proliferation and advocacy of its inclusion.

To quote panelist Sarah Triblehorn at the 2024 ARL President's Institute: "Policy isn't the goal; policy exists to keep us accountable."[26] While planning is not technically direct action, strategic plans guide efforts on an institutional scale and make meaningful direct action possible, which is essential if we are to have hope in the face of the climate crisis. We seek to expand the community of academic libraries doing work related to environmental sustainability and climate action – both in the practice of everyday work responsibilities of academic librarians, but also as a more prominent thread of scholarly conversation in academic librarianship and libraries at large as well. We hope these findings will encourage implementation of environmental sustainability into future iterations of strategic plans, as the climate crisis is an intersectional issue that requires our collective efforts to protect against the worst possible outcomes.

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[1] IPCC, "Summary for Policymakers," 5.

[2] American Library Association & Sustainable Libraries Initiative, "National Climate Action Strategy for Libraries."

[3] Canadian Federation of Library Associations, "Climate Action Committee."

[4] Vaughter et al., "50 Shades of Green: An Examination of Sustainability Policy on Canadian Campuses."

[5] Bieler et al., "Strategic planning for sustainability in Canadian higher education."

[6] Roos et al., "Sustainability management control systems in higher education institutions from measurement to management," 155.

[7] Jones et al., "More than just a green building: Developing green strategies at the Chinese University of Hong Kong Library."

[8] Jones et al., "More than just a green building: Developing green strategies at the Chinese University of Hong Kong Library," 377.
[9] Jones et al., "More than just a green building: Developing green strategies at the Chinese University of Hong Kong Library," 377.
[10] Ma et al., "Supporting the sustainable development goals: The role of the Chinese University of Hong Kong Library."
[11] Thorpe et al., "Assessing the United Nation's Sustainable Development Goals in academic libraries."
[12] Triblehorn, Tribelhorn, Sarah K. "Preliminary investigation of sustainability awareness and activities among academic libraries in the United States," 5.
[13] Slattery et al., "Mapping the Landscape of Sustainability-focused Efforts at Canadian Research Libraries."
[14] Canadian Research Knowledge Network (CRKN), "Members."
[15] Krippendorff, *Content analysis: An introduction to its methodology*.
[16] York University Libraries, "Strategic Plan."
[17] University of Regina / Dr. John Archer Library. "Dr. John Archer Library and Archives Strategic Goals."
[18] University of Alberta Library, "Mission, Vision, & Priorities."
[19] Bieler et al., "Strategic planning for sustainability in Canadian higher education."
[20] Queen's University Library, "Queen's University Library Strategic Plan 2022-2025."
[21] York University Libraries, "Strategic Plan."
[22] University of Regina/Dr. John Archer Library, "Dr. John Archer Library and Archives Strategic Goals."
[23] Bieler et al., "Strategic planning for sustainability in Canadian higher education."
[24] Vaughter et al., "50 Shades of Green: An Examination of Sustainability Policy on Canadian Campuses."
[25] Roos et al., "Sustainability management control systems in higher education institutions from measurement to management."
[26] Sarah Triblehorn, "ARL President's Institute 2024: Embracing Sustainability – Libraries Leading the Way," panel presentation, San Diego.

Bibliography

American Library Association & Sustainable Libraries Initiative. "National Climate Action Strategy for Libraries." Accessed October 4, 2024. https://www.sustainablelibrariesinitiative.org/national-climate-action-strategy-libraries

Bieler, Andrew, and Marcia McKenzie. "Strategic planning for sustainability in Canadian higher education." *Sustainability* 9, no. 2 (2017): 161.

Canadian Federation of Library Associations. "Climate Action Committee." Accessed June 4, 2024. https://cfla-fcab.ca/en/about/committees/cac-committee/

Canadian Research Knowledge Network. "Members." Accessed October 9, 2024. https://www.crkn-rcdr.ca/en/members

Intergovernmental Panel on Climate Change (IPCC). "Summary for Policymakers." In *Climate Change 2023: Synthesis Report*, edited by H. Lee and J. Romero. Intergovernmental Panel on Climate Change, 2023, doi: 10.59327/IPCC/AR6-9789291691647

Jones, Louise, and Winky Wong. “More than just a green building: Developing green strategies at the Chinese University of Hong Kong Library.” *Library Management* 37, no. 6/7 (2016): 373-384.

Krippendorff, Klaus. *Content analysis: An introduction to its methodology*. Sage publications, 2018. https://doi.org/10.4135/9781071878781

Ma, Leo FH, and Lily Y. Ko. “Supporting the sustainable development goals: The role of the Chinese University of Hong Kong Library.” *The Journal of Academic Librarianship* 48, no. 4 (2022). https://doi.org/10.1016/j.acalib.2022.102562

Queen’s University Library. “Queen’s University Library Strategic Plan 2022-2025.” Accessed October 9, 2024. https://library.queensu.ca/about/queens-university-library-strategic-plan-2022-2025

Roos, Nicolas, and Edeltraud Guenther. “Sustainability management control systems in higher education institutions from measurement to management.” *International Journal of Sustainability in Higher Education* 21, no. 1 (2020): 144-160.

Slattery, N. & Webb, J. “Mapping the Landscape of Sustainability-focused Efforts at Canadian Research Libraries.” Poster presentation, Academic Libraries Toronto Conference, May 7, 2024.

Thorpe, Clare, and Lyndelle Gunton. “Assessing the United Nation’s Sustainable Development Goals in academic libraries.” *Journal of Librarianship and Information Science*, 54 no. 2 (2022): 208-215. https://doi.org/10.1177/09610006211005528

Tribelhorn, Sarah K. “Preliminary investigation of sustainability awareness and activities among academic libraries in the United States.” *The Journal of Academic Librarianship* 49, no. 3 (2023). https://doi.org/10.1016/j.acalib.2022.102661.

Triblehorn, Sarah. “ARL President’s Institute 2024: Embracing Sustainability – Libraries Leading the Way.” Panel presentation. San Diego: February 8, 2024.

University of Alberta Library. “Mission, Vision, & Priorities.” Accessed October 7, 2024. https://library.ualberta.ca/about/vision

University of Regina / Dr. John Archer Library. “Dr. John Archer Library and Archives Strategic Goals.” Accessed October 9, 2024. https://library.uregina.ca/ld.php?content_id=36434420

Vaughter, P., Wright, T., & Herbert, Y. “50 Shades of Green: An Examination of Sustainability Policy on Canadian Campuses.” *Canadian Journal of Higher Education*, *45* no. 4 (2015): 81-100.

York University Libraries. “Strategic Plan.” Accessed October 9, 2024. https://www.library.yorku.ca/web/wp-content/uploads/2022/06/220513-YorkLibraries-StrategicPlan-web.pdf