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University of Kentucky Sustainability Strategic Plan

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*UNIVERSITY OF KENTUCKY
SUSTAINABILITY STRATEGIC PLAN*

Spring 2022 Capstone Project

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University of Kentucky | Martin School of Public Policy and Administration

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Executive Summary

Global climate change is impacting ecosystems, communities, and economies and will continue to do so into the future. To address these issues, sustainable practices and policies are needed on the local and global scale. At the University of Kentucky, sustainability implies that actions are ecologically sound, socially just, and economically viable. Harmonizing these three aspects is critical when developing and implementing sustainability goals on campus.

The Office of Sustainability is responsible for coordinating and implementing sustainability policies, actions, and programs for the University of Kentucky. In 2017, they released the first Sustainability Strategic Plan that set goals through 2022. The current plan is expiring, therefore the Office of Sustainability must reset their goals through 2030 in their new Sustainability Strategic Plan. This case focuses on the development of the new sustainability strategic goals and performance measures.

Based on focus group interviews with campus stakeholders, a strengths, weakness, opportunities, and threats analysis, and alignment with global climate science, five new goals were proposed for the Sustainability Strategic Plan:

1. Decarbonize campus operations
2. Become a zero waste campus
3. Adopt practices that minimize the University's negative environmental impacts
4. Reinforce and model the University's commitment to justice, diversity, equity, and inclusion
5. Make the pursuit of these goals an integral part of the UK student experience

The goals were adopted by the University to lead their sustainability efforts through 2030. To measure success toward these goals, performance measures and reporting routines were developed. This will ensure greater transparency and accountability when striving to reach these goals.

Introduction

According to the Intergovernmental Panel on Climate Change (IPCC), human activities have warmed the Earth's atmosphere, ocean, and land primarily as a result of burning fossil fuels. This

warming is evident because the past four decades have produced record breaking heats with 2010-2019 being the warmest decade ever on record. Because of this warming, there are widespread changes occurring to the global climate that has far reaching impacts on communities, livelihoods, and economies (IPCC, 2021). Urgent action through greenhouse gas reductions and sustainable development is necessary to mitigate the effects of climate change.

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs (United Nations Sustainable Development Goals, 2015). Sustainability will help create resilient environments for people and their economies by harmonizing the three aspects of sustainability: environmental protection, social inclusion, and economic growth. Harmonizing and balancing these three elements, often referred to as the triple bottom line, are crucial to achieving sustainability at any level (United Nations Sustainable Development Goals).

At the University of Kentucky (UK), sustainability implies that activities are socially just, ecologically sound, and economically viable. UK's Office of Sustainability is housed within Facilities Management, and over the past decade, it has worked to integrate sustainability initiatives and programs into the campus operations, academic curriculum, and student experience. This multi-prong approach to sustainability prepares students and empowers the campus community to support sustainability practices on the campus and beyond (UK Sustainability).

The Office of Sustainability is led by the Campus Sustainability Officer and is further supported by one Graduate Assistant and three undergraduate student interns. The Office of Sustainability is often described as the "connective tissue" for campus because it regularly brings the many campus stakeholders together for joint programs, partnerships, and programmatic updates. However, the Office of Sustainability has additional assistance focusing and coordinating campus sustainability efforts from the President's Sustainability Advisory Committee (PSAC). This Committee is made of 20 members that include student, faculty, and staff representatives. Because of this partnership, there is a very robust set of stakeholders and key actors that the Office of Sustainability regularly works and communicates with.

In 2016, UK's Office of Sustainability went through a strategic planning process and released the University's first ever Sustainability Strategic Plan in 2017.¹ The Office led this planning process but included PSAC, campus partners, and students to serve as stakeholders throughout the development of the plan. This plan set strategic sustainability goals through the year 2022 in seven topic areas that encompassed various campus operational units which includes:

- Materials management
- Energy
- Food and dining services
- Transportation
- Buildings and grounds
- Greenhouse gas emissions
- Water

Strategic planning is a “deliberate approach to producing fundamental decisions and actions that guide what an organization is, what it does, and why” (Bryson, 2018). This process can help leaders address major issues facing an organization, specifically issues that are not easily addressed through a simple solution. Additionally, strategic planning can help facilitate communication among different interests, can promote successful strategy implementation, and accountability. Overall, strategic planning can help an organization commit to effectively addressing the challenges they face (Bryson, 2018).

Research Question

As a case, I will focus on UK's sustainability strategic planning process. UK's Sustainability Strategic Plan is set to expire in 2022, therefore the Office of Sustainability will undergo a new strategic planning process to reset their strategic goals through 2030. While the current strategic plan was

¹ See UK's current Sustainability Strategic Plan here:
https://www.uky.edu/sustainability/sites/www.uky.edu.sustainability/files/UK%20Sustainability%20Strategic%20Plan.v.2.26.2019_0.pdf

successful in setting goals and action items, it failed in other areas that need to be addressed as it is updated. More specifically, the seven goals are hard to communicate, they are very operations-focused and do not encompass other University roles and function, and they do not include clear performance measures or reporting tools to track progress.

Moving forward, the new Sustainability Strategic Plan will need to reset its strategic goals to encompass wider University functions as well as taking global climate greenhouse gas emission reduction targets into account. According to the Intergovernmental Panel on Climate Change (IPCC), limiting human-induced global warming will require cutting greenhouse gas emissions by 50% by 2030 and achieving net-zero emissions by 2050 (IPCC, 2021). Additionally, including stronger performance measures and reporting tools will be a large priority for this new strategic plan. When properly developed, performance measures help an organization remain aligned with their mission over time and help organizations measure success towards their short-term goals (Sawhill and Williamson, 2001). However, there is not a clear way of aligning sustainability strategies with wider campus functional areas and global benchmarks on greenhouse gas emission targets. Additionally, there is a misalignment between the current Sustainability Strategic Plan's goals and performance measures. Therefore, I will be focusing my efforts on these two issues.

My research questions are as follows: How can UK's Office of Sustainability align sustainability strategies with wider University functional areas and global climate priorities? Additionally, how can UK's Office of Sustainability build more sophisticated performance measures and reporting tools into the strategies?

Literature Review

Strategic Planning Theory

Strategic planning is a set of intentional “concepts, procedures, and tools that organizations use when determining their overall strategic direction and the resources needed to achieve those objectives” (Bryson, 2018). Since the 1980s, strategic planning has grown in prominence in the public sector as

private sector management practices were promoted for use in public organizations (George et al., 2019). This practice largely grew in prominence because it proved successful for private companies, so the same could be said for public organizations. Since then, strategic planning has been viewed favorably by the public sector and policy makers because it has become a core part of public management practices (George et al., 2019).

In essence, strategic planning materializes three theories: the Harvard policy model, synoptic planning theory, and goal setting theory (George et al., 2019). The Harvard policy model argues that organizational success is contingent on an organization's ability to align with their environmental conditions. If an organization aligns their efforts with their unique internal and external factors, then they will be more successful. Synoptic planning theory argues that positive organizational outcomes result from systematic, rational, and analytical approach to decision making rather than emotion-based. Finally, the goal setting theory argues that organizations with clear goals perform better than those without because it ensures that resources and efforts are focused on the core issues (George et al., 2019). Because strategic planning combines these three theories, it arguably contributes to positive organizational performance.

However, there are criticisms with strategic planning, specifically that it does not contribute to better organizational performance. Some critics argue that strategic planning does not contribute to strategic thinking and it tricks managers into thinking they can control their strategy (George et al., 2019). Additionally, some critics argue that strategic planning is too fixed of a process and that flexible or ongoing methods of strategy formulation are more effective.

However, while there are some criticisms of strategic planning, it is still a widely used tool because of its many benefits to public organizations. Strategic planning enhances organizational effectiveness through improved decision-making and promoting strategic acting. This planning process focuses attention on crucial issues, thus allowing organizations to formulate clear direction. Additionally, this process encourages targeted conversations with many key stakeholders which can further develop human and social capital (Bryson, 2018).

However, there is no guarantee that strategic planning will produce all these benefits because there must be buy-in from stakeholder and leadership. Overall success of strategic planning depends on participants willingness to engage in the deliberate process (Bryson, 2018). To ensure strategic planning is effective and produces organizational benefits, it must be emphasized that there is no one standard way to carry out this process. Strategic planning theory is not a catch-all tool, but rather is a recommended approach that must be tailored deliberately to each organization (Bryson, 2018).

Strategic Planning Process

The strategic planning process is generic and must be tailored to each organization. However, the basic steps of a strategic plan are to set the vision and mission, develop overall strategies, determine action items and performance measures, and implement reporting routines (Figure 1). While each organization's specific strategic planning process may look slightly different, the successful implementation of a strategic plan creates a stronger ability for an organization to reach their goals (Elbanna et al., 2016).

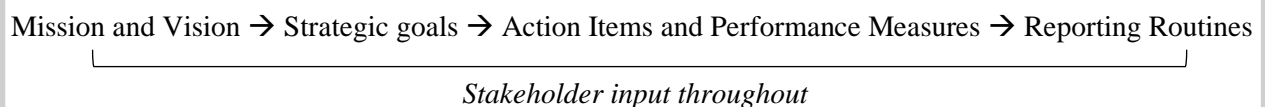


Figure 1. Strategic planning process.

Identifying strategic issues that the organization faces is at the heart of strategic planning because they become the basis for setting goals or objectives in the strategic plan. According to Bryson (2018), strategic issues are the fundamental challenges that affect an organization. However, there is always conflict when identifying strategic issues because there is an array of viewpoints and priorities, timeline of when they occur, and who may be advantaged or disadvantaged by them. To address these conflicts, organizations can use a strengths, weakness, opportunities, and threats/challenges (SWOT/C) analysis as analytical tools to help identify their strategic issues. A SWOT/C analysis helps an organization identify their critical success factors, which are areas that an organization must thrive at (Bryson, 2018).

Overall, constructive dialogue, intentional leadership, and multiple viewpoints are necessary for identifying strategic issues (Bryson, 2018). Once strategic issues have been identified, they are used as the basis for finalizing an organization's strategic objectives or goals. Aligning organization goals with strategic issues is critical because helps an organization prioritize their resources and efforts.

Another important component of strategic planning is developing performance measures, or standards used to evaluate and communicate performance against the expected results (Niven, 2014). Effective metrics help provide direction for organizational efforts and resources, ensures accountability, and can improve decision making. Performance measures should be linked to the strategic objectives or goals and should primarily be quantitative. Finally, performance measures should be user friendly, therefore accessibility and simplicity are often key to successful performance measures (Niven, 2014). However, for mission driven public and nonprofit organizations, measuring success can be nuanced. To address the nuance, performance measures must be tailored to an organization's mission and goals, through specific, measurable, actionable, and time-bound goals (Sawhill and Williamson, 2001).

Aligning strategies and performance indicators is an important task in the strategic planning process. According to Taylor (2014), different levels of an organization's culture shape the outcome of their strategic priorities and performance measures, so alignment is vital. If alignment is not reached, an organization faces threat of inconsistency between their desired behavior and actual outcomes. Issues related to alignment are very common in all organizations, so those involved in strategic planning should be aware of this throughout the planning process (Bryson, 2018).

Overall, the strategic planning process can be centered around three questions for an organization: where are we now, where do we want to be in the future, and how do we get there (Figure 2). These three questions can help center an organization's strategic planning efforts and create an effective roadmap for addressing their most pressing issues.



Figure 2. Alignment and strategic planning process.

UK Sustainability Organizational Context

For the Office of Sustainability, they are uniquely situated within several organizational contexts both within and beyond the University of Kentucky. First, as they are part of UK Facilities Management, they must reflect the various campus operational units that Facilities Management oversees. Second, they are part of the University of Kentucky as a whole, and thus the Office of Sustainability must consider the University's culture and objectives as well. Third, the Office of Sustainability is part of a national network of sustainability in education through the Association of Advancement in Higher Education (AASHE). Finally, they have a meaningful impact and duty relative to global climate change, so that role must be considered as well. There are widely used standards for all four of these cultural contexts, including the Facilities Management Master Plan, University of Kentucky Strategic Plan, AASHE reporting systems, and globally accepted climate benchmarks. These standards and common practices can be incorporated into the Sustainability Strategic Plan to successfully achieve alignment of its strategies and performance metrics.

Methods

Data Collection

For this case, I conducted two focus groups as my data collection methods. Because this was a human subjects data collection method, I completed the Institutional Review Board (IRB) application and received approval in January (Appendix A). The IRB serves to ensure that the research study follows ethical codes and conduct while involving human subjects. IRB approval is necessary for research

involving human subjects because their rights and welfare must be preserved throughout the study. (U.S. Food and Drug Administration, 1998). After receiving IRB approval, I began my data collection process.

To begin, I collected qualitative data by conducting two focus groups, one with members of the President's Sustainability Advisory Committee (PSAC) and one with members of the Office of Sustainability. First, I conducted the PSAC focus group with 14 individuals on Friday, February 11th in the University of Kentucky's Gatton Student Center. This pool of participants was recruited from PSAC and included student, faculty, and staff representation. To ensure both campus representation and familiarity with the subject matter, this pool of participants included individuals from various UK departments such as energy, grounds management, built environment, transportation, purchasing, and public relations. Additionally, there was student representation from the Student Government Association and the Student Sustainability Council.

The focus group members represent a broad swath of campus sustainability and helped ensure the responses were representative of campus. The purpose of this focus group was to collect information about UK Sustainability's mission and vision, critical sustainability issues, and potential goals to address these issues (Appendix A). The focus group was 60 minutes long and the questions included:

1. *Do you feel that the University of Kentucky's (UK) definition of sustainability represents the current culture of sustainability at UK? Do you feel that it represents the future of sustainability at UK?*
2. *What is an effective shared vision of sustainability for UK?*
3. *What are the three most critical sustainability related issues facing UK from now until 2030?*
 - a. *What possible goals could be set to address these issues?*
4. *Is there anything else you would like to add?*

After the PSAC focus group, I conducted a focus group with two members of the Office of Sustainability. This included the Campus Sustainability Officer and undergraduate communications intern. This focus group took place on Wednesday, February 16th at the Office of Sustainability in UK's Peterson Service Building and lasted 45 minutes. The purpose of this focus group was to collect

information about their priorities for the mission and vision, solutions to critical issues, and key performance metrics (Appendix A). More specifically, the Office of Sustainability questions included:

1. *Do you feel that the University of Kentucky's (UK) definition of sustainability represents the current culture of sustainability at UK?*
 - a. *Do you feel that it represents the future of sustainability at UK?*
2. *What is an effective shared vision of sustainability for UK?*
3. *What do you view as the most important critical sustainability-related issue facing UK?*
 - a. *What do you view as the most important goals to help address these issues?*
4. *What are key sustainability-related performance metrics for UK?*

I intentionally conducted separate focus groups with PSAC and the Office of Sustainability to collect information about the different stakeholder opinions. The Office of Sustainability will ultimately be responsible for communicating, implementing, and tracking the new Sustainability Strategic Plan. For that reason, I wanted to ensure their priorities and opinions were explicitly heard independent of PSAC's.

Analytical Tools

In addition to these data collection methods, I used a strengths, weakness, opportunities, and threats/challenges (SWOT/C) analysis as an analytical tool for solving my problem statement. A SWOT/C analysis helps an organization identify their critical success factors, which are areas that an organization must thrive at (Bryson, 2018). This analytical tool will help solve my problem statement because it will highlight the Office of Sustainability's internal and external environments which will help ensure the areas of strengths and weaknesses are taken into consideration when developing strategic goals and performance measures.

Data Analysis

After conducting the focus groups with the Presidents Sustainability Advisory Committee (PSAC) and Office of Sustainability, I analyzed the focus group data using qualitative coding approaches. According to Miles et al. (2018), a code is a word or phrase that symbolically assigns a summative or

essence-capturing attribute for a portion of language-based data. More simply, coding creates “buckets” to attach “chunks” of data to. When codes are clustered according to patterns, they facilitate the development of categories that allows the analysis of their connections (Miles et al., 2018). Qualitative coding is a cyclical process but largely follows these steps:

1. Pre-coding: Being intentionally aware of one’s bias
2. Decide which coding method is most prevalent
3. Start coding
4. Create a list of codes
5. Generate categories
6. Write about the categories to explain their significance

While there are several coding methods, I chose descriptive and attribute coding approaches for this case. Descriptive codes summarize the primary topic of the excerpt while attribute coding describes the features of the content being studied (Miles et al., 2018). Members of both focus groups were asked to respond to open ended questions about UK Sustainability’s (1) mission and vision, (2) critical issue areas, and (3) potential goals to address those issues. Responses were transcribed by an undergraduate student intern and myself as the focus group leader. To begin the qualitative analysis, I created descriptive and attribute codes for each of the three topic areas. Because both focus groups were asked the same questions, I used the same coding techniques for these two transcripts. To enhance rigor, I had my undergraduate student intern create codes as well. I calculated our intercoder reliability score, referring to the extent to which two or more independent coders agree on the coding of the content of interest with an application of the same coding scheme (Lavrakas, 2008), by calculating the percentage of matching codes between myself and my intern (O’Conner and Joffe, 2020; Miles et al. 2018).² Our intercoder reliability

² There is no universally accepted threshold for an acceptable ICR score but some standards suggest 80% agreement on 95% of codes. Some of the commonly used statistical tests of ICR present results on a scale between -1 to +1, with figures closer to 1 indicating greater correspondence. Some “rules of thumb” that exist for interpreting ICR values, observing ICR figures over .9 are acceptable by all, and over .8 acceptable by many, but considerable disagreement below that (O’Conner and Joffe, 2020).

score was 93%, which is widely considered a highly reliable value (O’Conner and Joffe, 2020). Thus, I proceeded with the first round of coding (Appendix B).

After this first coding cycle, I then synthesizing codes by categorizing them into similar categories. For the mission and vision codes, I connected the critiques to the shared vision. The purpose of this categorization was to understand how the critiques could be addressed by the description and attributes of a shared vision. Additionally, I linked the critical issue areas to the goal areas because critical issues must be solved through setting goals.

The Office of Sustainability was asked an additional question about performance measures. I again used descriptive coding and created three codes for these responses. I then followed the same coding approach as the previous responses by sequencing and categorizing. After this qualitative coding of both focus group responses, I theorized and drew conclusions to be applied to the Sustainability Strategic Plan.

Results and Findings

SWOT/C Analysis

After the focus group interviews, as an internal stakeholder as well as researcher, I completed a strengths, weakness, opportunities, and threats/challenges (SWOT/C) analysis for UK Sustainability (Table 1). I have been employed by the Office of Sustainability for two years and worked in partnership with them for two years prior that. Because of this, the SWOT/C analysis is a result of my direct working experience with the organization and then further informed by the focus group responses.

Internally, the major strengths of the organization are its highly engaged stakeholders with a diverse set of backgrounds and experiences. Additionally, another major strength is that this updated Sustainability Strategic Plan is building on the previous one, so there is some framework to work off of. However, some of the weaknesses were group time restrains as was evident by finding a time that worked with member’s schedules. Additionally, a lack of funding and capacity issues are a weakness that is evident. Externally, UK Sustainability has many exciting opportunities such as the possibility of

reinvigorating what sustainability is on campus and stepping into a leadership role in higher education and the Commonwealth of Kentucky. However, some major threats are disruptions caused by the COVID-19 pandemic and competing priorities of the institution at large.

SWOT/C Analysis	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Group composition: wide range of experiences and backgrounds • Group dynamics: collaborative culture • Strong executive support • Guidance from other Strategic Plans 	<ul style="list-style-type: none"> • Group time restraints • Lack of funding and capacity • Large public institution with political influence
Opportunities	Threats/Challenges
<ul style="list-style-type: none"> • Increase representation throughout process • Reinvigorate the idea of sustainability on campus • Step into leading role of sustainability in higher education • Alignment with UK's Strategic Plan and UK's Emissions Reduction Plan 	<ul style="list-style-type: none"> • Pandemic disruptions • Competing priorities • Leadership transitions • Finding commonality across campus

Table 1. A strengths, weakness, opportunities, and threats/challenge (SWOT/C) analysis of UK Sustainability.

A SWOT/C analysis is critical in the strategic planning process. More specifically, the findings from a SWOT/C analysis should inform the development of strategic goals and performance measures to ensure that the strategic plan is more than simply words on a page (George et al., 2019). For the development of the Sustainability Strategic Plan, I will combine the SWOT/C analysis and qualitative analysis results to recommend actionable items for the Office of Sustainability to take when implementing the plan. More specifically, the Sustainability Strategic Plan’s goals and performance measures will be developed with strong consideration of the organization’s strengths, weaknesses, opportunities, and challenges to ensure feasibility.

Qualitative Coding Outputs

After initial review of the transcripts, the first round of coding produced 27 unique codes for the focus group responses (Appendix B). There were 12 codes applied to the mission and vision responses that captured the vision statement’s critiques, what a shared vision for UK sustainability could be, and

attributes of an effective vision statement. There were eight codes applied to the critical sustainability issues which described what the issue areas are. Finally, seven codes were applied to the goal responses that described the goal areas and attributes of an effective goal. After these codes were created, I went through the transcript of responses and applied codes to the responses (Table 2). After this initial coding process, I then sorted the codes through counting the frequency of each code.

Topic Area	Code	Sample of Coded Text
Mission and Vision	Critique: Vague in activities	In trying to capture everything, it is a generic sounding statement. It doesn't pin down anything we are actually trying to do.
	Shared Vision: Interdisciplinary	We need to recognize how encompassing sustainability is so we can market ourselves as multifaceted. It needs to be collaborative because otherwise it would just be a single-sided vision.
Critical Issues	Greenhouse Gas Emissions	We need to ensure that we are staying on track to meet our greenhouse gas emissions and setting new targets to further our reduction commitments.
	Social Justice	How can we better align ourselves with social justice efforts? Engagement and collaboration on the social justice pillar of sustainability will be critical.
Goal Area	Waste Minimization	We should target becoming a zero waste institution, or 90% of waste generated not sent to the landfill.
	An effective goal is easily understood.	We need to communicate our goals in a way so that a bigger portion of the population can recall them, understand them, and relate them to their own area of study/expertise
Performance Measures	Data not already tracked.	Engagement numbers around various learning/service outcomes would be nice. We don't currently have that metric but would like to.
	Current data already tracked.	Waste reduction rates and greenhouse gas emissions are already tracked and can be part of the plan.

Table 2. Sample of qualitative codes and transcript excerpts.

Mission and Vision

Based on the qualitative analysis, there were several critiques of the current mission and vision statement. Overall, the statement was vague in its activities, included weak language, was not forward looking, and did not show leadership (Figure 3). Because of these shortcomings, the statement was difficult to use by practitioners when communicating what sustainability is and looks like at the University of Kentucky. However, a shared vision for UK Sustainability should be interdisciplinary in nature by recognizing environmental and social justice, be student focused, and expand beyond the boundaries of the University of Kentucky (Figure 3).

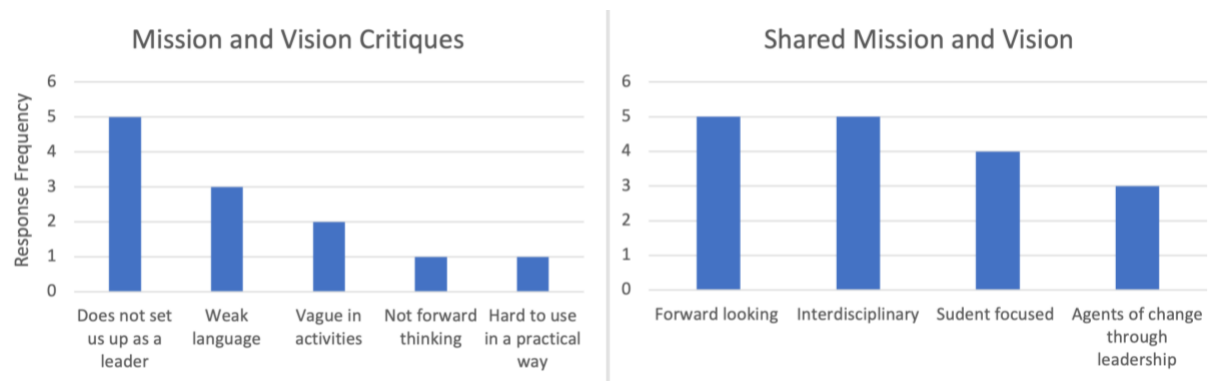


Figure 3. Frequency of mission and vision codes.

Issue Areas and Goals

The critical issues and goals areas are coupled because they represent a problem and potential solution (George et al., 2019). The analysis yielded eight areas as the most critical issues facing UK from now to 2030. Their rankings of most prevalent to least prevalent are as follows:

1. Student impact: Creating an environment for student success in and out of the classroom such as curricula, research, involvement opportunities, internships, and job training.
2. Greenhouse Gas Emission: Emissions from burning fossil fuels.
3. Waste: The volume of material waste generated throughout campus.
4. Environmental Impact: Changes to the environment as a result of human activities (air pollution, water quality, tree canopy cover, etc.)

5. Social Justice: Ensuring diversity, equity, and inclusion are at center of sustainability efforts.
6. Capacity and Awareness: The amount of work that can be done within an organization. Limiting factors are often staffing and funding.
7. Community Engagement: Involvement or education beyond the UK campus community and into the Commonwealth.
8. Land Use: Space management on campus such as new buildings and green-space.

To address these critical issues, focus group members discussed goals in four key areas. These areas include student experience and impact, greenhouse gas emissions, waste minimization, and social justice. The student experience and impact goal refers to sustainability opportunities in curriculum, research, internships, organizations, and activities. The greenhouse gas emissions goal area specifically refers to actions that help the University reduce their carbon emissions. Waste minimization refers to reducing the amount of material waste generated or finding creative solutions to preventing it from entering the landfill. Finally, the social justice goal refers to efforts that model social inclusion, diversity, equity, and justice. Additionally, the analysis yielded attributes of an effective goal are simple in messaging, easily understood, and encompassing of multiple issue areas (Figure 4).

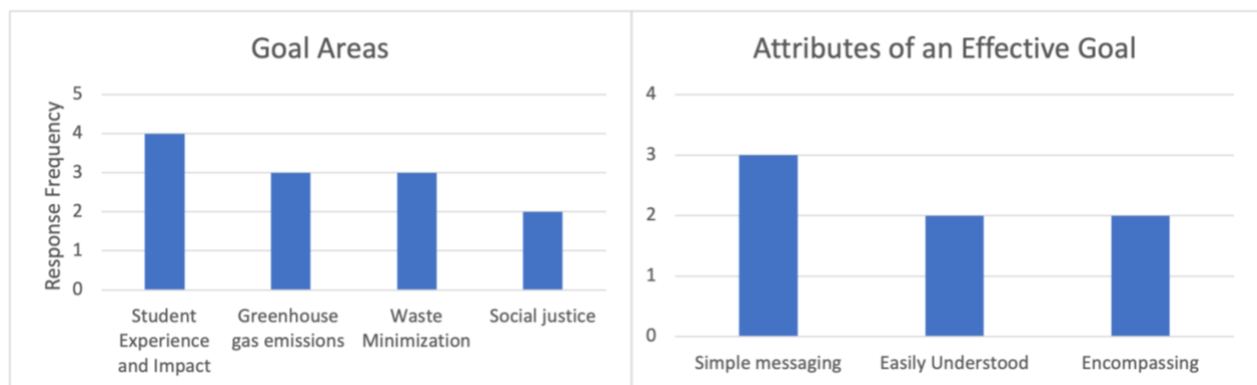


Figure 4. Frequency of goal area codes.

The categorization phase of the analysis directly and indirectly linked the eight critical issue areas with the four goal areas (Table 3). Capacity and awareness is an issue that largely connects and can be applied to many goal areas because this problem is often the limiting factor when implementing

strategies. However, some issue areas did not directly link with the issue areas, so I proposed new goal areas as a potential recommendation. This categorization resulted in a draft set of goals that will be used as a basis for setting the final strategic goals.

Issue Areas	Link	Goal Areas
1. Student impact 6. Capacity and awareness	<i>Direct link</i> <i>Indirect link</i>	Student experience and impact
2. Greenhouse gas emissions 4. Environmental impact 6. Capacity and awareness	<i>Direct link</i> <i>Indirect link</i> <i>Indirect link</i>	Greenhouse gas emissions
3. Waste 4. Environmental impact 8. Land use 6. Capacity and awareness	<i>Direct link</i> <i>Indirect link</i> <i>Indirect link</i> <i>Indirect link</i>	Waste minimization
5. Social justice 6. Capacity and awareness	<i>Direct link</i> <i>Indirect link</i>	Social justice
7. Community engagement 5. Social justice	<i>Created new goal as a link</i>	Community focus*
7. Community engagement 4. Environmental impact 8. Land use	<i>Created new goal as a link</i>	Steward of natural resources and communities*

Table 3. Categorization results of issue areas and goal areas analysis.

*created new goal that was not discussed in focus group responses.

Performance Measures

Finally, the analysis yielded two areas of potential performance measures: current data that is already tracked and new data that needs to be tracked. Currently, the Office of Sustainability tracks data through their Association of Advancement of Sustainability in Higher Education (AASHE) Sustainability

Tracking and Reporting System (STARS)³, UK's greenhouse gas emissions database, and waste diversion rates through Smartsheet's. These data are gathered from various departments throughout the University and compiled into a central location by the Office of Sustainability. However, there are some desired performance indicators not yet developed such as student engagement levels, social justice indicators, and human wellbeing indicators. Integrating already tracked data and proposing new data points for the Sustainability Strategic Plan's performance measures is a high priority among focus group responses.

Recommendations for UK's Sustainability Strategic Plan

Mission and Vision

The new mission and vision statement for UK Sustainability should include principles that address the focus group critiques and integrate attributes of the shared vision. Because of these findings, the new mission and vision statement for UK Sustainability should include the following four principles:

1. Ecologic integrity and social justice as the foundation of sustainability.
2. Integrate sustainability into the curriculum, research, and operations of UK.
3. Create student leaders to address current and future sustainability issues.
4. Be a model for the state of Kentucky and beyond.

These new principles are stronger in language and area more inclusive of what the future of sustainability entails. Additionally, a clear and concise vision statement with these principles will be easier to use by the Office of Sustainability when communicating what they are striving for.

Strategic Goals

The analysis yielded eight critical issue areas that were most prevalent to UK Sustainability from now until 2030. These issues covered a wide array of topics yet are interconnected to one another. To

³ See UK's STARS Report here: <https://reports.aashe.org/institutions/university-of-kentucky-ky/report/2015-10-16/>

address these critical issues and based on the focus group analysis, I recommend the following five goals for UK's Sustainability Strategic Plan (Figure 5):

1. Decarbonize campus operations
2. Become a zero waste campus
3. Adopt practices that minimize the University's negative environmental impacts
4. Reinforce and model the University's commitment to justice, diversity, equity, and inclusion
5. Make the pursuit of these goals an integral part of the UK student experience

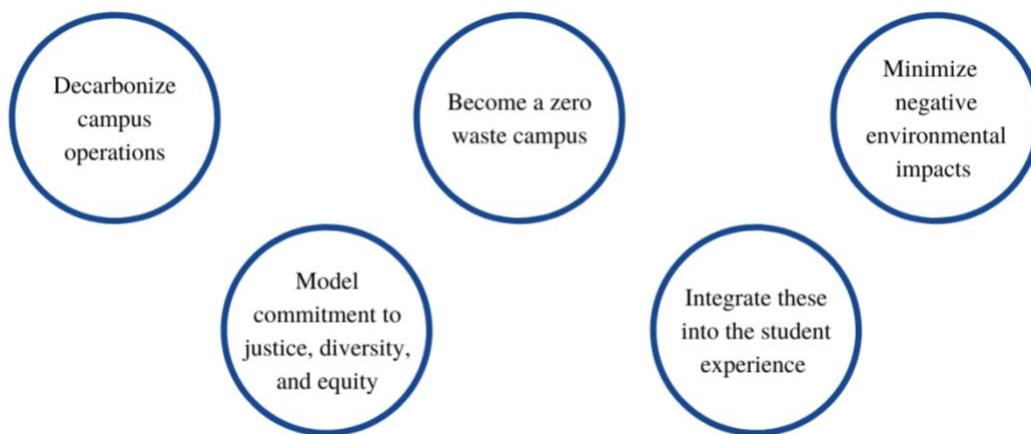


Figure 5. Recommended strategic goals.

More specifically, decarbonize campus operations means achieving a 50% reduction in greenhouse gas emissions by 2030. Additionally, become a zero waste campus means diverting 90% of material waste generated from the landfill. This can be achieved through waste reduction efforts, recycling, composting, donating, reuse, and more. Additionally, adopting practices that minimize negative environmental impact refers to exceeding regulatory environmental compliance in areas such as water quality, air pollution, tree canopy protection, and more. Modeling commitment to justice, diversity, and equity means implementing the University's Diversity, Equity, and Inclusion plan in the context of sustainability efforts. Some examples of this include adopting a land acknowledgement statement and reducing food insecurity on campus. Finally, integrating these goals into the student experience means ensuring there are sustainability courses, internships, research, organizations, and activity opportunities for students.

These strategic goals effectively encompass the critical issue areas, wider University function, and IPCC’s global greenhouse gas emissions reduction targets. As compared to the previous Sustainability Strategic Plan, these five goals go beyond just the operations side of campus and instead encompass other University roles such as the student experience and community at-large. Additionally, the decarbonizing campus operations goal aligns the University with the IPCC’s recommendation to cut greenhouse gas emissions by 50% by 2030 and eventually net-zero emissions by 2050 (IPCC, 2021).

More broadly, these goals align with sustainability efforts from other higher education institutions as well. There are several public university institutions that are comparable to UK because they are similar in size, scope, and function to each other (UK University Assessment). These institutions are often used as benchmark institutions for UK programs and efforts because they are appropriately comparable. In the context of sustainability, UK’s benchmark institutions such as University of Michigan (University of Michigan Office of Campus Sustainability), University of Iowa (Sustainable Iowa), and University of North Carolina Chapel Hill (Sustainable Carolina) have similar topic areas and structures for their sustainability strategic plans. The four recommended goals for UK’s Sustainability Strategic Plans are aligned with these benchmark institutions, thus showing the strength and relevancy of these goal areas (Table 4).

School	Goals
University of North Carolina, Chapel Hill	<ol style="list-style-type: none"> 1. Net zero greenhouse gas emissions 2. Net zero waste to landfills 3. Net zero water usage
University of Michigan	<ol style="list-style-type: none"> 1. Climate action: reduce greenhouse gas emissions by 25% 2. Waste reduction: reduce amount of waste sent to landfill by 40% 3. Healthy environments: purchase 20% of food from local sources; reduce pollution by 40%

	4. Community engagement: invest in sustainable futures for the community
University of Iowa	<ol style="list-style-type: none"> 1. Reduce greenhouse gas emissions 2. Institutionalize sustainability into campus culture 3. Prepare students through sustainability education 4. Share knowledge with the state, nation, and world

Table 4. Benchmark institutions’ strategic sustainability goals.

Additionally, these strategic goals were developed with strong consideration of the organization’s strengths and weaknesses. As shown in the SWOT/C analysis, some of the Office of Sustainability’s major strengths are its strong executive support and diverse set of robust stakeholders with various backgrounds. These goals are attainable in that there are subject matter experts in each of these goal areas who will contribute to their implementation. More specifically, I recommend that the implementation efforts begin by creating a task force for each goal that includes the subject matter experts. These task forces can develop actionable and realistic programs to achieve these goals.

However, the SWOT/C analysis also shows that weaknesses include capacity issues and time restraints. While there are a robust set of stakeholders, the Office of Sustainability itself is still a relatively small office. To effectively implement and carry out these goals, the Office should seek funding for at least one more full-time employee to help solve the capacity issue. Additionally, because the Office stakeholders’ represent a wide swath of campus, there should be efforts in place to ensure time is dedicated to reaching these goals. To combat time restraints, the Office should be proactive and instill routines by setting check-in meetings early and often. This will help ensure the implementation of these goals stays a priority for stakeholders.

Overall, these strategic objectives were created to be general enough that they encompass the critical issues and maintain the attributes of effective sustainability goals. In addition to encompassing the critical issues, wider university function, and global benchmarks on emissions reductions, they are easy to

communicate to both familiar and unfamiliar audiences of UK Sustainability. This is a huge priority for the Sustainability Strategic Plan because the strategic goals will be the overall catalyst for sustainability efforts, programs, and initiatives for the next eight years.

Performance Measures

Setting strategic goals is a central component of the strategic planning process, but there must be key performance indicators to measure success towards those goals as well. The analysis yielded three areas of desired performance measures for the Sustainability Strategic Plan: data already tracked, third party certifications, and new metrics not currently tracked. Based on these results, I recommended a mix of these performance measures for each sustainability goal (Table 5).

Goal	Key Performance Indicator	Source
Decarbonize campus operations	Scope 1, 2, and 3 Greenhouse Gas Emissions	Greenhouse gas emissions database
	Percent of Renewables in Electricity Mix	Greenhouse gas emissions database
Become a zero waste campus	Diversion rate	UK Recycling Inventory
	Amount of material recycled	UK Recycling Inventory
	Amount of material donated	UK Recycling Inventory
	Amount of material composted	UK Recycling Inventory
Adopt practices that minimize the University’s negative environmental impacts	Amount of air pollutants emitted	AASHE STARs Reporting
	Amount of water recycled or reused on campus	AASHE STARs Reporting
	Percent tree canopy cover	UK Grounds Inventory
	Percent green-space	UK Grounds Inventory
	Area of rainwater harvesting infrastructure	<i>Proposed new KPI</i>
	Number of LEED certified buildings	<i>Third party certification</i>
	Become a Bee Campus USA certified school	<i>Third party certification</i>

<p>Reinforce and model the University’s commitment to justice, diversity, equity, and inclusion</p>	<p>Percent of food insecure individuals on campus</p> <p>Number of Well Certified Buildings</p> <p>Amount of money allocated to local or minority owned businesses.</p> <p>Adopt a land acknowledgement statement</p>	<p>UK Campus Kitchens and UK Dining metrics</p> <p><i>Third party certification</i></p> <p><i>Proposed new KPI</i></p> <p><i>Proposed new KPI</i></p>
<p>Make the pursuit of these goals an integral part of the UK student experience</p>	<p>Curriculum: Number of sustainability courses offered</p> <p>Professional Development: Number of undergraduate student internship positions offered</p> <p>Involvement: Number of sustainability student organizations</p> <p>Education: Number of students engaged in outreach</p> <p>Research: Amount of money allocated to sustainability research</p>	<p>AASHE STARs Reporting</p> <p><i>Proposed new KPI</i></p> <p><i>Proposed new KPI</i></p> <p><i>Proposed new KPI</i></p> <p><i>Proposed new KPI</i></p>

Table 5. Proposed performance metrics for sustainability goals.

Of these, the data already tracked is comprised of data compiled by campus units such as UK Recycling, Dining, and Grounds and the Association of Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking and Assessment Rating System (STARs) reporting. However, while this data is already tracked on campus, it is currently not compiled in a central location. Because of this, I recommend that the Office of Sustainability gather this data in one central location to ensure the success towards to strategic goals can be effectively tracked. As shown in the SWOT/C analysis, a strength of the organization is that there is a robust set of close stakeholders that the Office works with, thus allowing easy and open access to this data.

Additionally, I propose using the Leadership in Energy and Environmental Design (LEED), Well Building, and Bee Campus USA certifications because they are standard certifications used worldwide in

the sustainability field. These certifications include various benchmarks that the campus must reach to achieve those certifications and allow the University to be formally recognized for their efforts.

Finally, there are some recommended performance measures not already tracked, most of which fall under the goal of integrating the efforts into the UK student experience. On its own, this goal is very hard to measure success by, so new performance measures are needed to better track progress. However, because these are data not already tracked, the Office of Sustainability must be diligent in collecting this data over time and reporting it out.

Overall, these performance measures must be compiled by the Office of Sustainability to ensure there is a central location for these data. To address capacity weaknesses that were shown in the SWOT/C analysis, I recommend that the Office of Sustainability designate their high achieving undergraduate intern to be responsible for collecting quarterly updates on these metrics. This reporting routine can be instilled in the intern's job description, thus ensuring that capacity is not an issue when tracking progress. Additionally, I recommend that the Campus Sustainability Officer complete a publicly available annual report on progress towards their strategic goals. Not only with this instill reporting routines, but it will ensure greater accountability in reaching these strategic goals.

Conclusion

Overall, the recommendations for the updated Sustainability Strategic Plan were developed to align with the University of Kentucky's institutional functions and with global climate priorities. Furthermore, the performance measures were developed to ensure that the goals are not performative but have tangible outcomes and measurable progress. There is a strong argument for adopting these recommendations for several reasons. First, these are aligned with other higher education institution's sustainability ambitions, thus allowing UK to be on par with national leadership in this field. Additionally, there are economic considerations for the implementation of these recommendations as well. Research indicates that climate change is occurring and will have a strong impact on global economics (IPCC, 2021). Because of this, institutions should act urgently to implement these goals to

ensure future cost avoidance and a return on investments. As a result of these considerations and this case, the recommendations for the updated Sustainability Strategic Plan will be adopted by the University of Kentucky to lead their sustainability efforts through 2030.

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Appendix A: IRB Approved Focus Group Questionnaires

Institutional Review Board Approval



EXEMPTION CERTIFICATION

IRB Number: 75249

TO: Sophie Beavin
Martin School of Public Administration
~~XXXXXXXXXXXX~~
PI email: sophie.beavin@uky.edu

FROM: Chairperson/Vice Chairperson
Nonmedical Institutional Review Board (IRB)

SUBJECT: Approval for Exemption Certification

DATE: 1/28/2022

On 1/28/2022, it was determined that your project entitled "*University of Kentucky Office of Sustainability Strategic Plan*" meets federal criteria to qualify as an exempt study.

Because the study has been certified as exempt, you will not be required to complete continuation or final review reports. However, it is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full review.

The Office of Research Integrity will hold your exemption application for six years. Before the end of the sixth year, you will be notified that your file will be closed and the application destroyed. If your project is still ongoing, you will need to contact the Office of Research Integrity upon receipt of that letter and follow the instructions for completing a new exemption application. It is, therefore, important that you keep your address current with the Office of Research Integrity.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "[PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research](#)" available in the online Office of Research Integrity's [IRB Survival Handbook](#). Additional information regarding IRB review, federal regulations, and institutional policies may be found through [ORT's web site](#). If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at 859-257-9428.

President Sustainability Advisory Committee Focus Group Questions:

1. Do you feel that the University of Kentucky's (UK) definition of sustainability represents the current culture of sustainability at UK? Do you feel that it represents the future of sustainability at UK?
2. What is an effective shared vision of sustainability for UK?
3. What are the three most critical sustainability related issues facing UK from now until 2030?
 - a. What possible goals could be set to address these issues?
4. Is there anything else you would like to add?

Office of Sustainability Focus Group Questions:

1. Do you feel that the University of Kentucky's (UK) definition of sustainability represents the current culture of sustainability at UK?
 - a. Do you feel that it represents the future of sustainability at UK?
2. What is an effective shared vision of sustainability for UK?
3. What do you view as the most important critical sustainability-related issue facing UK?
 - a. What do you view as the most important goals to help address these issues?
4. What are key sustainability-related performance metrics for UK?

Appendix B: Qualitative Analysis

Qualitative Codes

Mission/Vision Codes	
Descriptive: What are the critiques?	<ul style="list-style-type: none"> Vague in activities Weak language Not forward thinking Does not set us up as a leader Hard to use in a practical way
Descriptive: What is the shared vision?	<ul style="list-style-type: none"> Interdisciplinary Beyond UK community Agents of change through leadership Student focused
Attributes: What is a good vision?	<ul style="list-style-type: none"> Socially just Forward looking Encompassing
Critical Issues Codes	
Descriptive: What are the issue areas?	<ul style="list-style-type: none"> Environmental impact Greenhouse gas emissions Waste Community engagement Student impact Land use Social justice Capacity and Awareness
Goals Codes	
Descriptive: What are the goal areas?	<ul style="list-style-type: none"> Greenhouse gas emissions Waste minimization Student experience and impact Social justice
Attributes: What makes a good goal?	<ul style="list-style-type: none"> Simple messaging Encompassing Easily understood
Performance Measures Codes	
Descriptive: What are the performance measures?	<ul style="list-style-type: none"> Current data already tracked New areas not tracked

Third party certifications

Intercoder Reliability Score

The average intercoder reliability score is 93%.

Mission and Vision Codes		
Coder 1	Coder 2	Agreement
Vague in activities	Vague in activities	1
Weak language	Weak language	1
Not forward thinking	Not forward thinking	1
--	Does not set us up as a leader	0
Hard to use in a practical way	Hard to use in a practical way	1
Interdisciplinary	Interdisciplinary	1
Beyod UK community	Beyond UK community	1
Agents of change through leadership	Agents of change through leadership	1
Student focused	Student focused	1
Socially just	Socially just	1
Forward looking	Forward looking	1
Encompassing	Encompassing	1
ICR:		92%

Critical Issues		
Coder 1	Coder 2	Agreement
Environmental impact	Environmental impact	1
Greenhouse gas emissions	Greenhouse gas emissions	1
Waste	Waste	1
Responsibility/Role of institution	--	0
Community engagement	Community engagement	1
Student impact	Student impact	1
Land use	Land use	1
Social justice	Social justice	1
Interdisciplinary Nature	--	0
Capacity and Awareness	Capacity and Awareness	1
ICR:		80%

Goal Areas

Coder 1	Coder 2	Agreement
Greenhouse gas emissions	Greenhouse gas emissions	1
Waste minimization	Waste minimization	1
Student experience and impact	Student experience and impact	1
Social justice	Social justice	1
Simple messaging	Simple messaging	1
Encompassing	Encompassing	1
Easily understood	Easily understood	1
ICR:		100%

Performance Measures		
Coder 1	Coder 2	Agreement
Current data already tracked	Current data already tracked	1
New areas not tracked	New areas not tracked	1
Third party certifications	Third party certifications	1
ICR:		100%