Swette Center for Sustainable Food Systems
Arizona State University

Sustainability Ranking and Certification Systems in Higher Education Food Service

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Executive Summary

The goal of this report is to review and analyze how ranking and certification systems like Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment & Rating System (AASHE STARS), the Sierra Club Cool Schools program, Real Food Challenge, World Research Institute (WRI) Cool Food Pledge–along with others–have an impact on the sustainable food systems used by food service providers across higher education institutions (HEIs). This analysis includes a review of the most common metrics used in higher education sustainability ranking and certification systems, as well as how assessment guidelines are determined initially and amended over time. The positive, negative, and unintended consequences of these programs are also considered.

We examine how campus food service providers like Aramark, Compass, and Sodexo internalize these ranking and certification systems and how this may affect their sustainability efforts internally or when providing sustainability metrics data to higher education institutions for their ranking and certification reporting. Additional research and analysis is used to determine how these systems may encourage or discourage investment in sustainability-related areas, such as pursuing additional organic product lines, local and regional purchasing, or plant-based food options. Additionally, we explore how these ranking and certification systems may be used differently by various food service providers depending on the goals of each higher education institution.

The four key findings of this report are that the current assessment systems employ poor change management practices, there is an inability to integrate multi-vendor data, HEIs regularly report their challenges with allocating attention, expenses, and labor towards completing these assessments, and finally an overall low impact on sustainable food systems development. Based on these findings, recommendations are made for ways to enhance or reimagine what metrics are collected, how they are applied, how they relate to sustainability, how they support food service providers and HEI food system initiatives, and ways these types of HEI-led initiatives might impact the sustainability and resilience of food systems at the community and regional level.

Among these recommendations, this report suggests increasing the number of points that AASHE STARS allocates to food scoring, as well as strengthening collaboration between broad sustainability goals and food-specific programs. On the consumer-student end, we recommend increasing the affordability of sustainable and climate-smart meals, as well as encouraging HEIs to build out additional environmental education programs to increase understanding and connection around the importance of sustainable food and individual dining choices. Additionally, we recommend that assessment systems expand their metrics to include regional priorities, such as

sourcing produce from water-smart growers in arid and drought-stricken regions. Lastly, this report proposes HEIs mandate internal policies to support sustainable purchasing and dining options, as well as pursue innovative tools and data collection services that can alleviate the burdens HEIs experience around accurately filling out these reports.

Introduction

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the International Association of Universities, there are over 20,000 accredited or officially recognized higher education institutions (HEIs) in the world, with 2,129 of these located in the United States (UNESCO, 2022). The National Center for Education and Statistics (NCES) found that, as of 2020, when accounting for branch and satellite campuses, there were actually 6,145 discrete HEI campuses in the United States (NCES, 2020). Almost all HEIs, nationally and internationally, offer food service operations that range from vending machines, convenience stores, and quick-service outlets to full-service cafeteria and restaurant operations. Many offer a combination of all these (Williams, 2019).

In the 1950's and 1960's most HEIs managed their own food service operations. Over time, however, many HEIs found difficulty balancing the low-price elasticity of their student populations with the need to address rising food prices and labor costs (Gaddis, 2020). In the early 1970's there were a handful of companies like ARA (now Aramark) and Saga (bought by Marriot and later merged with Sodexo) contracted to provide food services to HEIs (Aramark, 2022; Giovannone, 2021). By the end of the 1970s this number had grown to over 700 contract-managed schools. As these and other contract vendors moved campuses away from "all-you-can-eat" and "any time" dining models, they found success with students by addressing their desire for price sensitivity and variety as well as with the institutions by maintaining expenses more effectively (Williams, 2019).

Often referred to as "the big three", today the largest higher education food service providers by overall revenue are Compass Group North America ($1.6 billion), Sodexo ($1.4 billion), and Aramark ($1.1 billion; Buzalka, 2018). These food service providers continue to use their scale to negotiate lower food prices locally and nationally while adapting to consumer preferences and administration goals and requirements. It is not uncommon to find food service providers developing innovative international, nutritional, and sustainable menus and outlets, as well as partnering with recognized chain restaurants to deliver branded concepts (Starbucks, Subway, Einstein Bros. Bagels, etc.) that are able to meet the preferences of student and faculty consumers and the financial requirements of the higher education institutions (Buzalka, 2021).

One of the largest and most dynamic changes to HEIs in recent years academically and operationally is in the area of sustainability. Once viewed as a catchall term for small-scale practices meant to mitigate some of the damages caused by large-scale industrial processes, sustainability is increasingly understood to be an enormously complex and

integrated system that touches on areas within and far afield of food and nutrition (Fisher & McAdams, 2015).

Much like higher education turned to contracted food service providers in the 70's and 80's to better manage their complex food service operations, now higher education institutions are looking to their food service providers to help them better understand and manage sustainability across their food service operations as part of their broader campus-wide sustainability efforts.

Along with this movement there has been a rise of third-party organizations that specialize in higher education sustainability tracking and reporting. These "ranking and certification agencies" use their expertise and knowledge to determine a set of comprehensive criteria that businesses must follow and report on to determine their "level" of sustainability. Examples of these kinds of ranking and certification agencies include the Association for the Advancement of Sustainability in Higher Education (AASHE) and Sierra Club, among many others.

This report examines the main ranking and certification systems and how they determine what categories and metrics are used to define and measure food sustainability, and how these may align or differ from one agency to another. We further look at how higher education food service providers manage sustainability internally and how they integrate these rankings and certifications. We investigate if the food service portion of sustainability rankings vary depending on the level to which the HEIs served utilize these rating systems in their larger operations.

We also explore if ranking and certification systems are capturing the most important or relevant data points to see if they truly embrace the notion of sustainability, or if they simply incentivize meeting sustainability outcomes for reporting purposes only. We further consider if these metrics serve to promote specific outcomes that might not be aligned with food service providers, higher education institutions and sustainable food systems overall. Finally, we make recommendations on ways for HEIs and food service providers to improve their sustainability rankings within existing frameworks while exploring how these systems might be adapted or reimagined in the future in order to better meet new and unexpected challenges to come.

Today's Context: Food Metrics are Overlooked in Assessment Rankings

Today's corporate landscape shows rapid and widespread adoption of a number of sustainability metrics. This can be observed in multiple examples, such as the rise in the number of sustainability reporting tools available to businesses, from Global Reporting Initiative (GRI), the Carbon Disclosure Project (CDP), ESG Goals (Environmental, Social, and Governance), to companies highlighting how their vision lines up with the UN's Sustainable Development Goals (SDGs; Pérez et al., 2022; Siew, 2015; United Nations, 2022). Another indicator is the more than 3,000 companies that have pledged to reduce their emissions through the Science Based Targets initiative (2022). One can also look at the rise among Fortune 250 companies who disclose ESG figures with their annual financial reporting rocketing from 9% in 2008 to 78% in 2017 (Serafeim & Grewal, 2016). Globally this trend of sustainability reporting has become so widespread that the International Financial Reporting Standards Foundation has created an International Sustainability Standards Board (ISSB) to help standardize these different reports to be comparable across industries (IFRS, 2021).

There does seem to be a lack of participation in food sustainability from the education sector – particularly higher education.

Looking beyond businesses, we can see a growing rise in sustainability efforts in nearly all aspects of life. For the past three years Deloitte has published their *Sustainability & Consumer Behavior* report, which has shown a year-over-year increase in consumer interest around sustainability and environmental issues (Deloitte, 2022). Forbes also noted this interest as a driving consumer trend, which they specified is especially strong among younger generations when it comes to purchasing decisions (Petro, 2022). After the numerous supply chain disruptions experienced during the Covid-19 Pandemic, the US Government has looked to rebuild local, sustainable food systems through several actions, including the investment of $10 billion to strengthen regional food systems and build climate smart infrastructure (The White House, 2021). Additionally, multiple headlines from the New York Times to Wired to Civil Eats, have focused on the negative impacts around red meat consumption, while at the same time a wider range of plant-based options are giving consumers a larger selection of sustainable dining choices (Ignaszewski, 2022; Moran, 2021; Reynolds, 2022; Smith, 2022). Altogether, one can see that there is a great deal of change and innovation occurring in the field of sustainability, particularly in food sustainability. But despite all of this new information, there does seem to be a lack of participation in food sustainability from the education sector–particularly higher education.

It’s not that higher education isn’t looking at sustainability. In fact, it's quite the opposite, with nearly all Higher Education Institutions (HEI) listing their sustainability goals and environmental impacts, along with a suite of different sustainability metrics available to aid in assessment, ranking, and certification. Food sustainability, whether referring specifically to campus dining or to general purchasing strategies, does not seem to warrant much consideration in these metrics. As this report will explore, food is one of the few areas where individual agency overlaps with system change in meeting sustainability goals. With the increase in HEIs participating in sustainability assessments, coupled with the food service providers expanding their food sustainability practices to meet ESG goals, it is imperative to look at why the metrics of food purchasing and food and dining services are not being scrutinized with the same intensity as other areas. This report is a first step in looking at both the importance of food sustainability and also how HEIs and assessment metrics can better integrate food sustainability into their goal setting process.

Literature Review

In order to understand how Higher Education Institutions (HEIs) use sustainability metrics, we need to understand how sustainability is being measured at the highest levels, and how this filters down to regional, corporate and higher education levels and, ultimately, to campus food service operations themselves. To do this, we will start with a review of the United Nations 2030 Agenda for Sustainable Development and how governments and government agencies arrive at, develop programs for, and track data from this program. From there, we will explore how the private sector uses Environmental, Social and Governance (ESG) goals in their self-assessment of sustainability.

United Nations Sustainable Development Goals (UN SDGs)

The origin of current sustainability metrics can be traced back to June 1992 in Rio de Janeiro, Brazil where 178 different countries met at that year's Earth Summit (Meakin, 1992). The outcome of this summit was the creation of Agenda 21, a framework for action by international, national, and local governments, agencies and groups (United Nations Sustainable Development, 1992). This led to the creation later that year of the Commission on Sustainable Development (CSD) to both monitor and report on the implementation of the Agenda 21 agreements at international, national, and local levels (United Nations, 2022).

The Millennium Summit in September 2000 led to the adoption of the Millennium Declaration which detailed eight specific goals to reduce extreme poverty by 2015. These goals were known as the Millennium Development Goals (MDGs) and were instrumental in putting clear, trackable, and measurable goals with reporting requirements into action (United Nations, 2022).

Figure 1: UN SDG Goals.

Over the next decade, additional conferences and assemblies met to align on a set of Sustainable Development Goals (SDGs) as well as a framework for SDG adoption and expansion through focused program development

and financing. This work ultimately culminated in 2015 at the United Nations Sustainable Development Summit where the 2030 Agenda for Sustainable Development was adopted (United Nations, 2015).

The 2030 Agenda for Sustainable Development encompasses a set of seventeen goals encompassing 169 specific targets that recognize the best way to address any singular sustainability goal requires acknowledging the interconnectedness of all goals (United Nations, 2022). According to the United Nations, whose member states adopted the 2030 Agenda for Sustainable Development in 2015, the SDGs represent, “An urgent call for action by all countries - developed and developing - in global partnership” (United Nations, 2022). The SDGs recognize that no goal stands by itself. Instead, there is a recognition of the fact that issues of poverty, health and education, or climate, oceans, and access to clean water, are often inextricably linked. To address the issues of one goal requires understanding and addressing how they interact with the other sixteen (Global Goals, 2022).

An example of the interconnected nature of SDGs can be viewed through the lens of sustainable food systems, which are central to the SDGs. The Food and Agriculture Organization (FAO) defines a sustainable food system as “a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised” (FAO report, 2018). This includes economic sustainability with profitability throughout the system, environmental sustainability with positive or neutral impact on the natural environment, and social sustainability with broad-based benefits for society. Sustainable food is not just about the farm or the farmer, it also encompasses the production, processing, distribution, consumption, and disposal of food and interconnected relationships to other social, economic, and environmental factors and structures (United Nations, 2022). Food systems are at the heart of how we sustain and nourish lives, use and manage natural resources, and drive economic industry across the planet. Therefore, we need to consider the interconnected nature of the SDGs in how we think collectively about food systems change as part of broader global sustainability efforts.

While the UN SDGs, commonly referred to as “Global Goals”, are not legally binding, they do provide a framework by which governments are encouraged to develop their own national goals in support of the larger United Nations SDG framework and reporting structure (Global Goals, 2022).

Corporate Sustainability Metrics

Historically, investors took a very straightforward approach to the decision-making around where to invest their financial assets: making investments wherever they were

likely to experience the highest returns. This view of investment changed, however, in the 1950s and 1960s when union organizations like the International Brotherhood of Electrical Workers and the United Mine Workers began investing large portions of their pension funds into more socially forward projects like affordable housing and healthcare facilities (Derickson, 1991). This trend continued in the 1970s, with the global rejection of the South African apartheid regime leading many HEIs, governments, corporations, and agencies to divest in that country along ethical lines (Teoh et al., 1999). At the same time, environmental groups began highlighting how the shared governmental and societal costs of pollution and inequitable labor practices were affecting society as a whole, if not corporations themselves. In 1988, entrepreneur John Elkington, who is widely regarded for bringing corporate sustainability into the mainstream, coined the phrase “triple bottom line” as a new way for corporations to consider success not through a company's financial gains and losses, but also its environmental and social impact (Elkington, 1988).

While these examples outline the beginning of modern corporate social responsibility, it was only recently that this trend towards responsibility became a driving force in business. From the 1950s through the 1990s, US corporations more or less followed the Friedman Doctrine of profit over philanthropy, believing in the assumption that companies that behaved in an ethical manner were less profitable than purely financially motivated ones (Friedman, 2007). This began to change in 2006 when a study by Michael Barnett and Robert Salomon showed that there was a curvilinear relationship between financial performance and social responsibility. The idea was that one could find success by investing in profitability or sustainability, but not both simultaneously (Barnett & Salomon, 2006). A paper in the *Journal of Financial Economics* written by Wharton professor Alex Edmans (2011) highlighted the fact that the financial returns of companies who were listed in the “100 Best Companies to Work For” actually performed 2-3% better in their stock returns than their peers. For the first time corporations began experimenting with ways of not just investing sustainably, but to make themselves more sustainable as a way to attract additional investment.

In 2005 the United Nations Environment Programme Finance Initiative and the United Nations Global Compact established the “Principles for Responsible Investment Initiative” as a framework for companies to follow that outlined how Environment, Social, and Corporate Governance (ESGs) could be analyzed and applied in both a company’s investments and their operations (PRI, 2022). Unlike SDGs, which are a specific set of goals, ESGs refer to “Environmental, Social and Governance” performance and are more often thought of with respect to a company’s financial returns. Over the past 15 years ESGs have become an increasingly common part of business reports, particularly because they allow businesses the opportunity to highlight some of the work they are doing that may pay off in long-term environmental development and business longevity,

but are hard to communicate on a traditional P&L sheet (Serafeim & Grewal, 2016). As a result, ESGs are less about goals and more about guidelines by which companies report their actions.

In modern business parlance, ESGs are known as the “three pillars” of sustainability, akin to the three legs of a stool. If one of the legs, or pillars, is missing, the stool falls over (Newport, 2012). ESGs are a holistic way to think about sustainability from a corporate perspective. How are you helping, or at least not harming the environment? How are you advancing social equity like fair wages and gender parity? How are you using your corporate growth to support the economy now and to ensure the economy works for future generations?

Today there are many ESG standards, like the Global Reporting Initiative (GRI) and the Sustainable Accounting Standards Board (SASB) that help corporations across a wide range of industries track many data points across their organizations. These standards are utilized primarily by publicly held companies who track these non-binding metrics to improve investor engagement rather than meeting any larger national or global sustainability goals (GRI & SASB, 2021). Additionally, these different sustainability standards have proven useful to organizations looking to bring attention to the more intangible features of their business, such as positive brand equity, credibility, and long-term investments aimed at creating future success (Patara & Dhalla, 2022). Reputation and brand equity have been shown to be particularly bolstered by successful corporate social responsibility and sustainability reporting, allowing organizations to better attract and retain employees, secure long-term shareholder value, and build consumer loyalty to the brand (Cowan & Guzman, 2020).

While some HEIs report on their ESGs, these efforts themselves do not contribute to ranking and certification systems directly. Companies that are involved in agriculture or food systems in general use ESGs to set goals and track progress and outcomes. Many times, these ESGs and the tracking systems they use are specific to these companies or their industries. And this is no different for higher education institutions, who often use a more industry-specific set of metrics and tools. While HEIs could work within their own individual organizations to progress towards ESGs, Minutolo et al. (2021) noted that a major draw for HEIs to participate in publicly available sustainability metrics is that they are able to signal to their stakeholders (and future stakeholders in the form of potential new admissions) that sustainability is a principal concern for the institution. Additionally, these metrics do not only signal the HEIs’ intent to incorporate sustainable goals in their organizational vision, but also offer a way to measure the HEIs’ performance in attaining those goals (Minutolo et al., 2021).

Higher Education Sustainability Metrics

After the 1972 UN Conference on the Human Environment in Stockholm, Sweden, there was global interest in developing Environmental Education (EE) around the globe (GDRC, 2015). This was formalized in the 1975 Belgrade Charter, which was billed as "a global framework for Environmental Education," that called for a "global ethic" around environmental awareness to address issues of inequality, reframe our priorities around the environment, and foster a better understanding of how rapid economic growth was leading to environmental decline (Kopnina, 2012). While the Belgrade Charter looked at all schools across the globe, the first attempt to formalize a set of sustainability goals for *higher education* was the 1990 Talloires Declaration. This declaration, originally convened by Tufts University President Jean Meyer in Talloires, France and signed by twenty-two presidents of higher learning institutions around the globe, formalized language around sustainability awareness, culture, education, environmental literacy, institutional ecology, stakeholder involvement, and interdisciplinary collaboration. The ten-point action plan was non-binding, and non-specific, but it represented a new kind of thinking for HEIs on ways to approach sustainability (Tufts University, 2005). As of 2021, there were 520 colleges and universities across 61 countries who had signed onto the declaration (ULSF, 2021).

> **The Belgrade Charter:**
> Environmental education, properly understood, should constitute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values.

This role of HEIs in sustainability was again pushed into the spotlight after the UN's Rio Summit in 1992, when the publication of Agenda 21 outlined the UN member countries' goals for sustainability education and training (Kalinowska & Batorczak, 2015; United Nations Sustainable Development, 1992). In the 2002 declaration of the United Nations General Assembly for the "Decade of Education for Sustainable Development (2005-2014)" UNESCO was designated as the lead agency to promote integration of principles and practices in sustainable development into all aspects of education and learning. This included encouraging nations to embed sustainability education in all facets of higher education with interdisciplinary links connecting sustainability to social, economic, and justice issues at the federal and local level (Bina et al., 2014; Kalinowska & Batorczak, 2015). Unfortunately, the goals of Agenda 21 for sustainability education

did not come to fruition, leading some members to note that education was, “the forgotten priority of Rio” (Smyth, 1999). Aiming to correct this, in the lead-up to the Rio+20 Conference in 2012, the UN published their Higher Education Initiative and relaunched their goal for sustainable education and as part of that had their member countries affirm their commitment to Agenda 21 (United Nations, 2012).

Along with the UN, there have been calls from fellow academics for a stronger embrace of environmental and sustainable education on the part of HEIs. Cronemberger de Araújo Góes and Magrini (2016) stated that social responsibility for HEIs is visible in their ethical obligation to “systematically integrate sustainability in their activities,” and also “in the development of a more equitable and sustainable society” (p. 2). Zamora-Polo et al. (2019) noted that HEIs have a foundational role in a nation’s progress towards meeting SDGs as they educate the next generation of leaders in their classrooms. They noted that HEIs have a fundamental part of achieving SDGs by building sustainable development competencies among future leaders and “global citizens”. Although published over 25 years later, this idea is at the heart of the UN’s Agenda 21, where both sets of authors see environmental education as the key to a global transformation of society (Zamora-Polo et al., 2019). Echoing Agenda 21’s call for interdisciplinary sustainability education, Zamora-Polo and Martín (2022) also noted the importance of teaching sustainability “transversally,” where it would be found at all levels and stages of education. These recurring themes, both from within academia itself and from the different branches of the UN, show the strong demand for sustainability over the previous decades, which also follows the increase in the number of sustainability assessment programs available to HEIs.

Today, there are a number of ranking and certification systems used in higher education here in the United States. HEIs have indicated that they have seen the greatest success in overcoming sustainability challenges (particularly an absence of leadership and funding) through open communication and collaboration across departments; two things that institution-wide metrics excel at initiating (Arroyo, 2017). Measuring sustainability through a HEI-specific metric is important for tracking sustainability trends over the long term, as HEIs have the unique characteristics of major turnover every four years with their student body. While students have been identified as major agents of change on college campuses, the transitory nature of the student body does add a level of variability that many organizations do not need to consider (Arroyo, 2017). Tracking sustainability helps add a level of consistency, but HEIs still need to decide which metric to employ. Some assessment programs are specific to one key metric, like Second Nature’s “University Climate Change Coalition (UC^3)” or the University of New Hampshire’s “Carbon Clinic” that features a Sustainability Indicator Management & Analysis Platform (SIMAP) that focuses solely on carbon reduction, or the Environmental Protection Agency’s “Green Power Partnership” that focuses explicitly on

renewable energy resources (Collison, 2010; Second Nature, 2021). This is true of food system initiatives as well.

Ranking agencies such as the Princeton Review's "Guide to Green Colleges" and the Times Higher Education (THE) "Impact Rankings" all utilize various categorical and ranking methodologies with different levels of emphasis and weighting to determine sustainability ranking. Often the top university or college on one list is not found on another because of the way each ranking system views the importance of one sustainability category or metric over another. We will explore the differences in these ranking assessments later, but as a brief example of this point, we note the drastic differences in the top performers for 2021, when looking at just three metrics. AASHE listed their top three scoring sustainable HEIs as Arizona State University at number one, followed by a tie for second place between Colby College and Dickinson College (Bates College followed as number four; AASHE, 2021a). Princeton Review's top three Green Colleges for that same year were College of the Atlantic for first, Oberlin College ranked second, and Middlebury College coming in third (The Princeton Review, 2021). Lastly, Sierra Club's Cool Schools also listed Arizona State University as number one, but included the University of California, Irvine at second place, with Thompson Rivers College at third.

These differences have led to calls to formalize a single, standardized metric for college rankings. Although there isn't an official standardized metric, the most widely used higher education sustainability ranking and certification system in North America is AASHE's Sustainability Tracking, Assessment and Rating System (STARS; Urbanski & Filho, 2015). This system allows HEIs to capture a wider array of metrics reflecting the breadth of their sustainability efforts. AASHE's existing broad reach among HEIs allows for wide adoption of the STARS program. Since then, AASHE has taken on a cross-collaborative approach, where AASHE partners with another in their standards or metrics and the same data is shared across both platforms. Examples of this can be seen in the data sharing between AASHE and the Sierra Club and Real Food Challenge, among others (AASHE, 2021b; Real Food Challenge, 2018). Despite the popularity of AASHE STARS, there are still many categorical distinctions and ranking methodologies among these systems which are unique to each system. These distinctions still require a large amount of resources on the part of HEIs and their vendors to collect and report their data to these various ranking and assessment agencies.

Real Food Challenge was the first program developed to evaluate HEIs' food and dining metrics, rather than broader sustainability metrics. The organization seeks to leverage the purchasing power of institutions to build more sustainable and equitable food systems using their Real Food standards and calculator and the support of student campaigns. Their metrics look broadly at the many aspects of food systems– including

how and where food is produced, labor conditions, nutrition, and more (Real Food Challenge, 2016).

A newer sustainability initiative specific to food and climate change, the World Research Institute's (WRI) "Cool Food Pledge," has been successful in getting a number of HEIs and campus food service providers to sign up. What distinguishes the Cool Food Pledge from other ranking systems is that WRI analyzes particular campus dishes to determine if the ingredients have a low enough carbon footprint to meet WRI's greenhouse gas (GHG) emission goals. If the dish meets these qualifications, it will be listed as a "Cool Food" in the HEI's dining services (Waite et al., 2019). With this process, students can clearly see which specific meal choices are best for slowing climate change, rather than not knowing which ingredients have been sustainably sourced.

What follows is a deeper exploration of these and other ranking and certification agencies and platforms, their effectiveness in broadly capturing sustainability metrics, and their functionality specific to food service providers in capturing the work they do on behalf of HEIs, and in relation to these institutions' own organizational sustainability initiatives.

Sustainability Trends in Institutional Food Service

Over the last two decades, there has been a great deal of interest and demand for sustainable food among consumers (Zamuz et al., 2021). In 2021, the Economist Intelligence Unit released a report commissioned by the World Wildlife Fund that compiled a wide-ranging collection of data to make the case that businesses need to respond to increasing demands for sustainable and environmental practices. Among their data points was a 71% rise since 2016 in global Google searches exploring sustainable products, a 103% rise in media coverage of environmental protests between 2018-2019, and a global survey conducted by Boston Consulting Group where 75% of respondents said environmental issues are as much of a concern to them as health issues (The Economist Intelligence Unit, 2021). The report also noted a consumer survey reporting 50% of respondents switched brands because a company did not meet their values, with the primary value in question was to switch to a brand to "protect the environment" (The Economist Intelligence Unit, 2021). This demand has been recognized by institutions–including HEIs, schools, hospitals, and more–and they are responding to the trend by revisiting their sustainability practices (Low et al., 2015). As these institutions modify their practices and update how they source their food, this represents an opportunity for HEIs to increase access to local and sustainable foods among large, diverse populations and make a greater impact on the food system due to the expansive purchasing power they hold (Fitch & Santo, 2016).

Furthermore, from a business perspective of wanting to keep customers happy, HEIs are on a constant journey to keep up with consumer demand and sustainability trends. As noted in a 2016 edition of Foodservice Magazine, “The market that we're in is such that doing some level of sustainability, like using Energy Star equipment, is just baseline. You need to step up your game to be able to say you're pushing the envelope on sustainability today” (Tanyeri, 2016). This has led to the development of several trends that food service providers are increasingly exploring to expand their market share and connect with consumers. Three of the more prominent trends are a focus on local foods, sustainability certification and labeling, and plant-based foods.

This interest and demand for sustainable, quality food has spurred a trend of local and regional food purchasing (Fitch & Santo, 2016). Between 2002 and 2007, direct-to-consumer sales increased by 32%, with a 17% increase in the number of farms engaging in direct-to-consumer sales (Low et al., 2015). Fast forward nearly a decade, total sales of local food products continued to grow from $8.7 billion to $11.8 billion, representing 35% market growth for local food (Martinez, 2021).

Institutions, including HEIs, followed suit with local purchasing. Some of the most notable growth in local sourcing has occurred at K-12 schools thanks to the Farm to School movement, but many HEIs have also expanded their local food sourcing (Low et al., 2015). For example, Bon Appetit Management Company, a division of Compass Group that provides food service at HEIs across the country, launched its Farm to Fork program in 1999 with a goal for each operation to purchase at least 20 percent of their ingredients from small, owner-operated farms and ranches located within 150 miles of their kitchens. Today they have partnered with over 1,200 local vendors and built in a requirement for their chefs to source at least 20% of the food locally (Bon Appétit Management Company, 2022).

In addition to local food, there has also been a recent rise in consumer attention towards animal welfare, sustainable seafood, and organic production practices (Greene et al., 2017 Kearns, 2021; Mench, 2008). As Fitch and Santo (2016) point out, local and regionally sourced food is not inherently more sustainable, ecologically or socially, than non-local food. “Additional considerations, such as third-party certifications, must be considered to ensure that all of the benefits that institutional procurement policies nominally support are pursued” (Fitch & Santo, 2016). Thus, many HEIs have turned to third party certifications such as Monterey Bay’s Seafood Watch and Humane Farm Animal Care’s Certified Humane certification to round out their sustainable food purchasing, the status of which is primarily communicated to consumers through labeling (Zamuz et al., 2021).

Most recently, we’ve seen a large growth in plant-based foods. While national surveys have shown only a slight change in the number of consumers identifying as vegetarian

(6% in 1999 and 2001, 5% in 2012 and 2018 polls) or vegan (2% in 2012, 3% in 2018 polls), two-thirds of Americans have indicated that they are reducing their overall meat consumption (Neff et al., 2018; Reinhart, 2018). While in previous decades making a commitment to a plant-focused diet has involved limited options at a restaurant or campus dining facility, the rise in widely available plant-based meats has given vegan, vegetarian, and consumers looking to reduce meat consumption, a greater selection of dining options (Ignaszewski, 2022). Additionally, food service providers have found success in moving plant-based foods out of a "health-food-only mindset" and offering plant-based meats in fast-food venues, such as Beyond Meat's partnerships with Panda Express to offer plant-based orange chicken and a collaboration with Taco Bell for plant-based carne asada (Schaltegger, 2022; Watson, 2022).

So why aren't all HEIs embracing these sustainable food trends with more enthusiasm? There are many factors that influence a HEI's food purchasing. While not the primary focus of this research (and a topic complex enough for a separate study), a few significant factors include supply chain adaptability, contracts, and the cost of sustainably sourced goods.

Cost

Incorporating sustainability into food purchasing practices has a recurring cost to it. As a sustainability representative from ASU explained in an interview, "If you buy organic food this year, you still have to buy more organic food next year. It's a never-ending cost premium. And it is tightly counterbalanced by the desire to provide affordable meal plans to students so financial costs are an unquestionable barrier." On top of this, the majority of HEIs' dining services are operated by third party companies that have incentive to keep operational costs (including food costs) low for their customers and for their own bottom-line.

There is also the larger picture of higher education costs that have been an increasing topic of public debate for years now. Sobel (2013) analyzed the rising costs of higher education and how it was impacting the operating mindset of HEIs looking to manage their budgets, public perceptions around education affordability, and absorbing or passing on the rising costs of external goods and services. A particularly notable example in Sobel's (2013) report was of Ohio State University struggling to come to a conclusion over whether their next university president should have the background of a financially-minded CEO or the qualifications of an academic (Sobel, 2013). This conflict between balancing tuition affordability with meeting sustainability goals has led many HEIs to favor initiatives with tangible future cost-savings, such as solar, rather than addressing the complex issues around sustainable food systems (Hanus et al., 2019).

Contracts

Contracts are a driving force in how and where HEIs purchase food, and there are several layers of contracts to consider–particularly at HEIs that work with a first party food service management company (which are discussed in more detail in the following section.) Many HEIs sign contracts with food service management companies, who then have contracts with suppliers to purchase their food. These complicated, nuanced contracts can present hurdles or construct barriers around pursuing changes in the foods purchased and served at a HEI (Fitch & Santo, 2016).

At institutions with a contracted food service management company, significant changes in food purchasing may require approval from corporate leadership at the food service management company as well as HEI leadership. As described by a representative from Aladdin Food Management Services, “Everything that we do, we kind of have to get two ‘yes’s.’ We have to get one from the client on campus, and one from corporate as well.” This is particularly true when such changes require a modification in the overall budgeting–which as already noted, comes into play when considering the increased cost of some “sustainable” food products. Many food service management companies also have their own standardized purchasing standards and practices that can make it difficult to quickly and nimbly adjust how and where food is purchased. Furthermore, many food service management companies have contracts with suppliers that, in turn, require individual operations at client HEIs to purchase a certain amount of products from these approved or preferred suppliers. According to the organization Farm to Institution New England, most food service management companies require their clients to buy at least 80% of products from pre-approved vendors (Obadia, 2015). As noted by the same Aladdin representative, these quotas can be a barrier to purchase new products outside of their primary supplier, such as products from a small farm or local business.

Supply Chain

The reality is that the US supply chain was built over time to produce efficiency and scale and serve large food companies (York, 2019). Shifts in purchasing towards more sustainable food products typically means a shift away from the values of efficiency and mass production that the supply chain was built on. It can take considerable time and logistical planning to get new food products into the doors of HEI kitchens, and some farms or suppliers may not be able to meet the requirements of scale or cost to make their products operationally feasible for HEIs.

As we heard in an interview with a sustainability representative from ASU, “We hear a lot from the Aramark staff that they ordered “X”, but Sysco didn't have “X” that week, so they just shipped whatever conventional equivalent. Or it's a constant discovery process

of ‘hey! Fair Trade has individual sugar packets for coffee stations, these exist now, so we can find them.’ But does our vendor carry them? Are they on the Aramark approved list?” While it is easy to make a commitment on paper to sustainable purchasing, the need to support day-to-day dining operations is not always met by the current infrastructure around purchasing and fulfillment.

Similarly, something as seemingly simple as wanting to buy fresh peppers from a nearby farm may not actually be simple. Does the farm have the necessary food safety certification and insurance coverage that the food service vendor requires? Are they able to provide enough peppers for the HEI? Does the Dining Services team have the staff needed to prep that raw product, compared to the pre-cut product that they typically buy from Sysco?

The “Big Three” Food Service Providers

A significant number of HEIs contract with third party companies to manage their food service operations. When it comes to these contract-managed food service providers, there are many local, regional, and national companies competing in the higher education space. Between 2019 and 2022 there were dramatic shifts across the entire foodservice industry due to COVID-related college and university closures and staffing challenges. But the main three competitors, Aramark, Sodexo, and Compass Group North America (including their subsidiary food service providers like Chartwells) are known as “The Big Three” and represent a combined 78% of the overall industry (Goldin & Friends, 2020). As such, they offer a unique window into not only higher education foods service operations, but also into how these providers manage sustainability within their own operations, how they integrate into the sustainability initiatives of their higher education clients, and how they measure various sustainability metrics across internal and external systems.

Aramark

Aramark Corporation was originally founded in 1959 in Southern California by two brothers, Davre and Henry Davidson, who provided vending services to the burgeoning aviation industry in the area (Aramark, 2022a). As of their fiscal reporting for 2021, Aramark Corporation is a $12.1 billion dollar company across 22 countries providing facilities services, food services, hospitality management, refreshment services, supply chain services, and uniform services across a range of industries including corporate, corrections, education, healthcare, leisure, and sports and entertainment (Aramark 2022b; Statistica, 2022a). Their food services division serves nearly 2 billion meals each year, ranking 3rd in higher education food service providers with an annual US revenue (2021) of $2.1 billion from their education sector (Statistica, 2021).

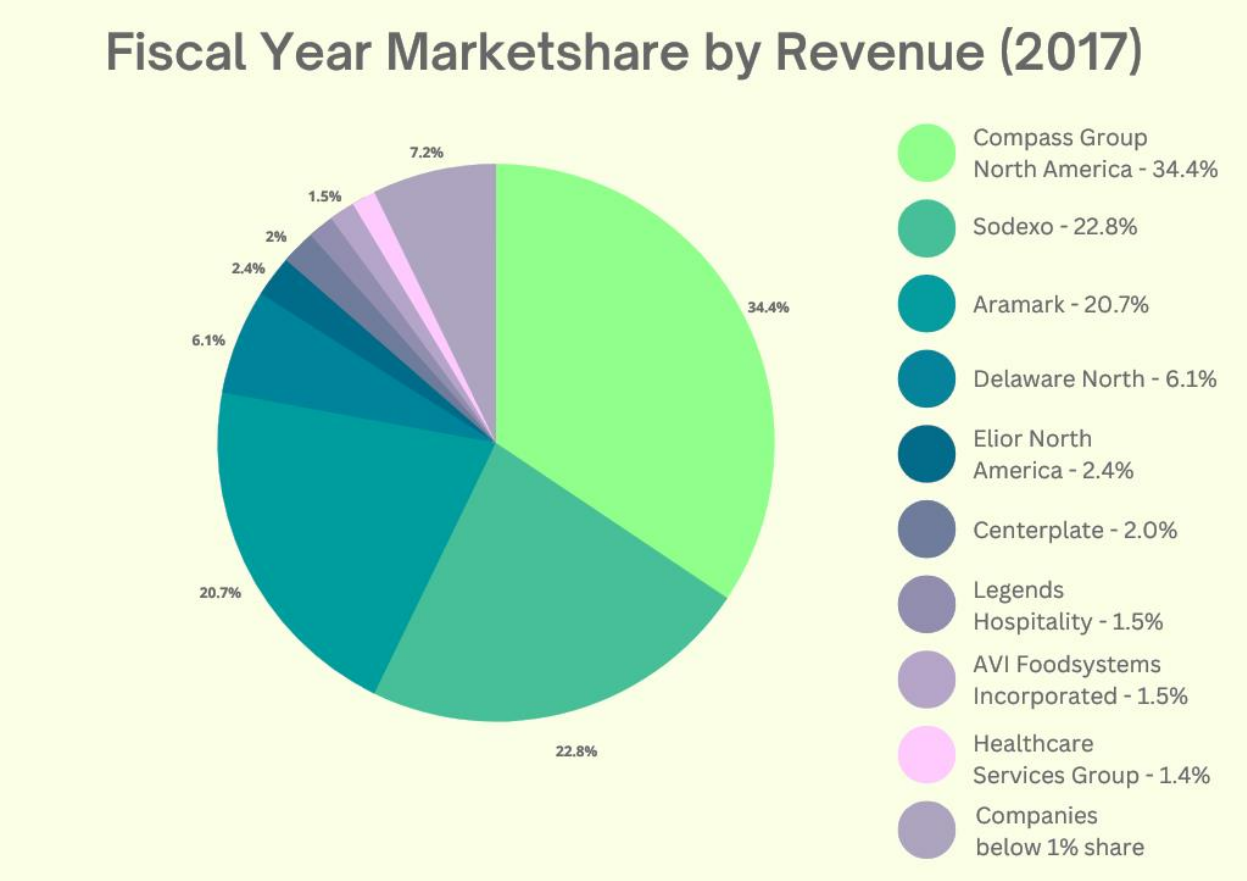

Figure 2: Market share by revenue. Data source: Buzalka, 2018

Compass Group

Compass Group Public Limited Company is a multinational contract food service company with headquarters in Chertsey, England. With an annual revenue (2021) of $21.6 billion (US), Compass Group is the largest food services company in the world servicing factories, hospitals, offices, sports venues, correctional facilities, K-12 schools and higher education institutions (Compass Group, 2021; Statistica, 2022b). Founded in 1941 by Jack Bateman under the name Factory Canteens Limited, today Compass Group provides commercial waste management, building operations, maintenance, and landscaping services. Compass Group owns many restaurants and contract managed food service companies, most notably Levy Restaurants, a major sports arena food service vendor, and Eurest Support Services which specializes in large-scale food and facilities management in military bases and conflict zones around the world. Compass Group North America includes multiple brands and businesses that support higher education food service locations, such as Bon Appetit Management Company, Canteen Vending, Chartwells Higher Education, Chartwells K12, and many others (Compass Group, 2021).

Sodexo

Sodexo is a food services and facilities management company based in Issy-les-Moulineaux, France. Originally founded in 1966 by Pierre Bellon as *Société d'Exploitation Hotelière* (Hotel Services Corporation), the company got its start in France providing corporate, academic and hospital dining services. Today Sodexo is a $17.4 billion (2021) company working in 56 countries. Sodexo USA, their US food services division ranks 2nd in higher education food service providers with an annual US income (2021) of $6.8 billion. (Sodexo, 2021a)

All three food service providers offer contract-managed food and facilities management services for over half of all higher education institutions in the United States, offering campus dining options like food courts and branded concept restaurants, coffee shops, stores, catering, concessions, kiosks, carts, and other outlets. All three also enter into joint venture partnerships with national, regional, and local third-party food and beverage companies including Starbucks, Subway, Einstein Bros. Bagels, Chick-fil-A and others (Oches, 2013).

Internal Sustainability Program Outcomes

Before we evaluate how Aramark, Compass and Sodexo contribute to higher education sustainability ranking and certification systems, it's worth taking a moment to consider how they approach and measure sustainability internally. Institutional standards and goals for food procurement can be seen as reflection of current trends and priorities of what consumers are advocating for, but these standards are also a way for food service providers to set trends that they believe will lead to long-term success for their companies. In evaluating these three companies, we hope to underscore the sustainability work they are independently doing and contrast that with what information is captured in the different HEI sustainability assessments and metrics.

Aramark

Aramark has a very comprehensive and detailed list of sustainability practices and reporting mechanisms that demonstrate their approach to sustainability. From their alignment of eight key business operation outcomes in support of eight of the United Nations Sustainable Development Goals to the company's ESG reporting, these practices, priorities, and progress are all detailed in their yearly Impact Report. This report provides a thorough review of all aspects of their "*Be Well. Do Well*" enterprise sustainability plan including progress on their key performance indicators (KPIs) as well as updates on their employee diversity, equity, and inclusion initiatives, healthy consumer empowerment, local community investments and volunteerism, sustainable sourcing, facilities operations efficiencies, food waste reductions, ESG governance, and

more (Aramark, 2021).

Figure 3: Aramark Priorities among UN SDGs. Source: Aramark, 2021

The main agencies Aramark works with to report on their sustainability metrics for the Impact Report are the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB) and the Task Force on Climate-related Financial Disclosures (TCFD). This only represents a fraction of the ranking and certification systems and advisory bodies that they receive input from and share data with (Aramark, 2021a). Their recent commitment to reducing greenhouse gas (GHG) emissions 25% by 2030 is informed by the new Net-Zero Standard set by the Science Based Targets Initiative (SBTi), a partnership between the CDP, the United Nations Global Compact, World Resource Institute (WRI) and the World Wide Fund for Nature (WWF) that seeks, “to drive ambitious climate action in the private sector by enabling organizations to set science-based emissions reduction targets” (Science Based Targets, 2021).

Aramark shares its climate and forests impact reports through the Carbon Disclosure Project (CDP), a global non-profit charity that was founded in 2000 as a platform to increase the adoption of voluntary disclosures when it came to corporate environmental impacts and sustainability initiatives. CDP’s global environmental disclosure system has since scaled to include companies, cities, and entire regions worldwide. In North America over 2,500 companies and over 200 cities and states disclose their data for use by investors, city stakeholders and others as they progress from initial disclosure through ongoing progress on climate change, forest, and water security (CDP, 2022).

From a food service perspective, Aramark provides clear direction to its suppliers via a rigorous Supplier Code of Conduct that outlines expectations on animal welfare, antibiotics stewardship, deforestation priorities, ethical seafood requirements, and single-use plastic. These expectations are informed by agencies and initiatives like the Monterey Bay Aquarium Seafood Watch program, Marine Stewardship Council, Aquaculture Stewardship Council, Global Aquaculture Alliance, Seafood Watch, Fishery

Improvement Project (FIP), Roundtable on Sustainable Palm Oil (RSPO) standards, the Accountability Framework Initiative (AFi), Global Animal Partnership's Animal Welfare Rating Program, European Chicken Commitment (ECC), RSPCA Broiler Breed Welfare Assessment Protocol, and the UK's Farm Animal Welfare Committee (FAWC) Global Principles on farm animal standards (Aramark, 2019).

Aramark works closely with HEIs to source local and sustainable products that benefit local farms, farmers, food producers, and others encompassing more than 6,000 small and diverse suppliers nationally. Their "Green Thread Initiative" helps design and implement customized, individual sustainability plans for colleges and universities that address sustainability issues specific to their locality and regionality, as well as areas of campus focus (food sourcing, waste reduction, energy and water conservation, emissions reductions, and more; Aramark, 2016). Aramark has partnered with the American Heart Association on their "Healthy for Life" initiative that offers healthy menu options, student outreach and engagement, and community nutrition education (Aramark, 2019). They have pioneered the use of hydroponic micro-gardens that grow herbs and other greens inside their kitchen facilities while using 90% less water while significantly reducing packaging and transportation waste and cost. They also launched an innovative concept called "Local Restaurant Row" on over 40 campuses across North America that partners with local restaurants, food trucks, and area chefs to bring locality to the forefront of campus dining (Aramark, 2021b).

Compass Group

Like Aramark, Compass is also extremely comprehensive in its approach to sustainability. But unlike other food service providers, Compass breaks out its food service operations into subsidiary companies that focus on everything from Business & Industry (Bon Appetit, Eurest, Restaurant Associates, and more) to Sports & Entertainment (Levy, Wolfgang Puck Catering), Vending (Canteen), and Healthcare & Senior Living (Morrison Healthcare, Canteen; Compass Group, 2022a).

In the Education space, Compass has eight different tailored dining service operations including Canteen (campus markets, vending, coffee service), Bon Appetit, Gourmet Services (catering), FISD (Flik Independent School Dining), Chartwells K12 (Elementary), and Chartwells Higher Ed. Sustainability practices are a foundational part of several of these services, like Bon Appetit that focuses on their Farm-to-Fork initiatives, and FISD that provides meals from scratch, nutritional education, and a wellness-first approach. This focus transcends sustainability as a good practice or business/marketing strategy, and instead creates a kind of brand differentiation, allowing institutions to self-select their preferred level of sustainability operations.

An interesting feature of Compass Group's overarching relationship to these other companies is how Chartwells Higher Ed's "Sustainability Scorecard" tracks, as a percentage, to the degree that it meets the specific criteria of Compass Group's sustainability initiatives. In addition to sourcing seafood that meets the Monterey Bay Aquarium Seafood Watch program guidelines, they also purchase yogurt and milk from non rBGH (artificial growth hormone) cows and antibiotic-free poultry, they also source eggs that are Humane Farm Animal Care (HFAC) certified cage-free. Compass Group was the first food service company, in 2016, to commit to the Global Animal Partnerships (GAP) agreement to serve only slower-growing, more naturally raised chicken. Chartwells also sources Fair Trade products at all of their locations around the country, they work with local and regional farm networks to source at least 20% of their products from within 250 miles of each campus (Chartwells Higher Ed, 2022a).

Figure 4: Compass Group Sustainability Strategy. Image recreated from Compass Group, 2021.

Additionally, Chartwells partners with HowGood, a SaaS (Software as a Service) data platform. HowGood uses its database of over 33,000 ingredients, chemicals, and materials to provide insights to their clients on the ingredient-level impacts of products across a wide-range of factors like greenhouse gas emissions, water usage, land use, animal welfare, working conditions, and other key impact areas. This allows companies like Chartwells to conduct detailed assessments on which products they use and how these products may affect their overall sustainability or operational goals. Chartwells will begin rating their recipes using these key impact metrics on their dining hall menus and signage nationwide fall of 2022 (Chartwells Higher Ed, 2022b). Chartwells' signature

sustainability policy is around “Stop Food Waste Day”, a commitment to reducing food waste fifty percent by the year 2030 and to get to Climate Net Zero by 2050 (Compass Group Holdings PLC, 2022).

Even in the area of vending, where sustainable sourcing is more difficult and the nature of packaging and disposability means a more limited ability to address issues like waste and nutrition, through their Chartwells partnership with Life Water and the drop4drop program they ensure 100% recyclable and BPA free packaging and use a portion of the proceeds to fund clean water projects around the globe. This initiative has supported 150 clean water projects across Africa and India, with more clean water projects underway (drop4drop, 2018).

Compass also promotes a robust and detailed Global Supplier Code of Conduct that details the commitment to high standards of ethics and integrity, as well as internal and external expectations and responsibilities. Given the diversified and global nature of Compass Group, the code of conduct addresses issues of human rights and modern slavery as well as non-discrimination, harassment, and inclusion as well as their overall commitment to the environment and the communities they serve (Compass Group, 2022b).

Sodexo

Where Compass Group has the “Climate Net Zero by 2050”, as of 2019 Sodexo has the goal to reduce their carbon emissions by 34% by 2025 (compared to their 2017 baseline numbers) and have a comprehensive roadmap to becoming Net Zero in their UK and Ireland businesses. The company collaborates with organizations like the World Wildlife Fund, the CDP (formerly known as the Carbon Disclosure Project), SBTi (Science Based Target initiative), and RE100, a global renewable energy initiative that works with corporations as they transition towards zero carbon organizations. This work has led to Sodexo committing to 100% renewable energy in all of its operations by the year 2025 (Sodexo, 2021b).

Similar to Chartwell’s initiatives around food waste, Sodexo promotes their WasteWatch program that integrates waste-measurement technology into its daily tracking and reporting practices that has led (as of 2021) to a 45.8% reduction in food waste at over 878 Sodexo sites. As part of this work Sodexo has made a commitment to phase out single use plastics and have pilot programs testing different types of reusable products in their operations like mugs and cutlery (Sodexo, 2021c). A foundational part of their food reduction efforts for the last 20 years has been through their “Stop Hunger Foundation” that offers surplus food to local agencies for redistribution to organizations and individuals in need (Sodexo Stop Hunger Foundation, 2021).

Figure 5: Sodexo's goals for reducing environmental impact. Source: Sodexo, 2022b

Like the other big-three members, Sodexo requires their vendor partners to source local and seasonal foods whenever possible. In Sodexo's case, in 2017, this effort resulted in the purchase of over 30 million pounds of local produce from over 2,000 farmers and farmer cooperatives contracting with over 75 regional distributors. In 2010 they were the first food service provider to remove threatened seafood species products from their supply chain, and over the last decade have made commitments to animal welfare including cage-free poultry, among other efforts (Sodexo, 2022). They also partner with JUST (EatJUST), a company that provides plant-based, GMO-free eggs that use 98% less water, 83% less land than conventional egg production, all while contributing 93% less carbon (Sodexo, 2020).

Sodexo launched their Supply Chain Inclusion Program in 2001, to promote more small businesses within their supply chain, with special attention paid to small and medium-sized enterprises (SMEs), companies owned or directed by minorities, women, or underrepresented groups, and suppliers who supported similar goals (Sodexo, 2022).

External (Higher Education) Sustainability Outcomes

As we have seen, there is a significant amount of work being done by Aramark, Compass Group, and Sodexo in the field of sustainability in general, and in their food service operations specifically. Their work is informed by dozens of global, regional,

national, local, nonprofit, and for-profit entities at the forefront of the sustainability movement. They have a robust strategy and methods for measuring, collecting, reporting, and sharing their sustainability data with consumers, customers, administrations, and agencies. All of which begs the question: *When it comes to widely adopted HEI sustainability certification systems like AASHE STARS, why is the scoring around food so low*? *What topics and issues around food are these higher education sustainability programs looking at that don't capture the progress and goals of their food service providers? What do these HEI assessments consider success in campus food and dining, and are HEI's achieving success with their food sustainability programs?*

In our Analysis of Metrics section, we'll examine the leading ranking and certification systems used by HEIs, including how these align with and differ from internal metrics being collected by food service providers. We'll consider what's working well, and what changes can be made to view the impact of these metrics more comprehensively on not just food service operations but on food systems directly.

Methodology

Data was collected through interviews and public data collection. This report benefited from the wealth of publicly available information provided by HEIs, food service providers' annual CSRs, NGOs such as the United Nations and its agencies, and US government agencies, such as the National Center for Education Statistics and the USDA's Economic Research Service. Support for these organizations and the information they freely provide to researchers is crucial for reports like this to accurately address research questions and further public knowledge around topics of interest. The goal of the interviews was to obtain insights from representation from industry participants in ranking and certification systems as well as campus food service providers. The respondents represent the three largest ranking and certification bodies, several food-specific ranking and certification agencies, two of the largest campus food service providers in the country, and sustainability representatives from selected HEIs.

The interview questions were formally submitted through the ASU Internal Review Board (IRB) and interview responses were anonymized so that interviewees could speak freely about the challenges and opportunities they have encountered in navigating sustainability goals in higher education and different assessment programs. The IRB approved interview form contained a series of questions, starting with broad topics relevant to all participants, then moving to more targeted lines of questioning tailored to specific industries or agencies. The questions were generally divided as follows:

1. Overview Questions
2. Ranking and Certification Organization Specific
3. Ranking and Certification System Challenges
4. Policy Questions
5. Food Service Specific Questions
6. Impacts (positive/negative, intended/unintended)

A total of 14 interviews were conducted with individuals representing a broad spectrum of food service providers, higher education institutions, sustainability/support, and ranking and certification agencies.

Study Limitations

Most research studies have inherent limitations based on the type of study, the focus of the research, and a host of other criteria around which the study is designed. Our focus was on the intended and unintended consequences of sustainability ranking and certification systems in higher education settings. Where applicable we have included scientific research, but the main objective was to determine the real-world applicability

of these systems. Our goal was to learn how food service providers utilized systems internally, how their systems may or may not integrate into higher education ranking and certification systems, and how the ranking and certification agencies affected practices within higher education and food service providers because of their methodologies and reporting requirements. Based on these learnings, our goal was to determine if intended consequences of these ranking and certification systems were being met (ie. moving the needle on sustainable practices) or if there were any unintended consequences as a result of these systems.

Regarding interviews, our main limitation was selection bias. Around fifty percent of HEIs have a vendor manage their own foodservice, with the overwhelming majority run by Aramark, Sodexo, and Compass Group. This means that to encompass the largest number of campuses, we were limited to essentially three vendors. To offset this bias, we interviewed multiple people within each organization across multiple roles and responsibilities in order to get the most holistic and informed feedback.

Similarly, there are only a handful of ranking and certification agencies that are used widely, AASHE STARS, Princeton Review, and Sierra Club's "Cool Schools" program being the most prevalent. The Cool Schools program ended in 2021 so while we were able to interview and gather information and insights, its applicability is limited.

Unless otherwise indicated, cross-comparisons between agencies, companies, and higher education institutions were compared using like-year metrics. For instance, if the 2021 ESG report for Aramark was considered, the 2021 ESG report for Sodexo and Compass were also considered.

Analysis of Metrics

There are important differences in how ranking and certification systems work. Higher education ranking systems (sometimes referred to as rating systems) compare colleges and universities across a series of metrics and ranks them. A well-known example is the U.S. News & World Report's yearly ranking of "U.S. News Best Colleges" that use a methodology that measures both hard statistics like graduation and retention rates based on specific data, as well as less scientific measurements like undergraduate academic reputation that is collected from peer assessment surveys. This data is then aggregated and higher education institutions are compared against similar institutions to determine their overall rank. In many cases ranking occurs without participation in the ranking system, using publicly available data. Some metrics, like the Princeton Review's *Guide to Green Colleges*, use a combination of both student surveys and institutional reporting to produce their ranking guides.

Where ranking systems compare, certification systems evaluate. They do this using formal methodologies to confirm if specific threshold requirements are met and to what extent. If the criteria are met, certification is awarded. Institutions generally must apply for certification and provide documentation and data which are then validated by the institution granting certification. Well known examples of this in higher education are the US College Accreditation process and AASHE STARS in higher education sustainability (Department of Education, 2022).

Each ranking and certification system has its own methodologies for scoring, and its own process for reporting, each with its own unique set of positive and negative attributes, which we will now explore in more detail. Some of these systems, such as the Princeton Review, focus on overall sustainability, but do not specifically address food and dining services in higher education. Others, such as AASHE do but only to a limited extent as a percentage of their overall analysis. Meanwhile, other programs specific to food sustainability metrics have formed to fill what they see as a gap in quantifying and leveraging food metrics for systems change.

While AASHE STARS and Sierra Club's Cool Schools are well-recognized sustainability ranking and certification systems for HEIs in the United States, there are global ranking systems for HEIs that incorporate sustainability metrics into determining overall rankings. Much like the certification systems in the United States, these rankings and assessments are designed and administered by different academic or research organizations to both broadly assess the HEI overall, as well as examine its faculty and facilities, public works, and educational program designs. While the exact methodology may vary, the goal is the same: to bolster the HEI's reputation and attract new applicants. Sayed (2019) noted this, remarking "the 'International Student Survey' of

prospective students revealed that ranking lists are important in student choice of HEIs" (p. 39). Studies about the implications of recruitment and marketing indicated that rankings influence stakeholders' and funding agencies' decision making as well (Maringe, 2006). Horan and O'Regan (2021) put it much more plainly as a matter of HEIs keeping up with one another, noting "[T]hat 'being green' is increasingly impacting global university rankings, and that enhancing environmental sustainability can serve as a competitive advantage" (p. 4).

For a condensed, side-by-side comparison of these different metrics, please see the Appendix.

AASHE

History and Overview

The Association for the Advancement of Sustainability in Higher Education (AASHE) was born from the Education for Sustainability Western Network in 2001. With a focus on sustainability efforts in higher education, AASHE was launched shortly after in December 2005. AASHE's vision is "lead[ing] higher education to be a foundation for a thriving, equitable and ecologically healthy world." With more than 900 HEI members, AASHE is considered the foremost organization for institutional sustainability efforts in the country (AASHE, 2022a). AASHE offers collectivity, support, and credibility to HEI's in their sustainability efforts with support from diverse partnerships with nonprofits, businesses, and international agencies. AASHE also hosts annual conferences for sustainability innovations in HEIs across North America (Zahniser, 2011).

AASHE Mission Statement:
To inspire and catalyze higher education to lead global sustainability transformation.

Perhaps what they're best known for, AASHE developed one of the most widely adopted and highly regarded sustainability ranking systems, The Sustainability Tracking, Assessment & Rating System (STARS), for HEIs. AASHE launched STARS in response to a call from the Higher Education Association's Sustainability Consortium (HEASC), who wanted to standardize sustainability assessments with a shared ranking system (Urbanski & Filho, 2015). After three years of planning and development, in 2009 a limited test run of STARS filtered out to select HEIs that signed up as STARS Charter Participants. This was followed up with the first full iteration of STARS launched in 2010, which was heralded as an opportunity for HEIs to promote sustainability efforts through comparative reporting metrics (Zahniser, 2011). With many sustainability ranking and certification programs to choose from in the US, many HEIs have chosen AASHE STARS to be their primary sustainability metric program (Urbanski & Filho, 2015). Although STARS offers numerous benefits to HEIs looking to highlight their

sustainability goals and progress, it has also been repeatedly noted to be one of the more balanced metrics in assessing HEIs of all sizes, from community colleges to universities (Alghamdi et al., 2017; Kamal & Asmuss, 2013). Additionally, there has been a call among HEIs to simplify and standardize ranking metrics, rather than having a HEI dedicate time and resources towards filling out multiple rating forms for different metrics (Sassen & Azizi, 2018). For this reason, AASHE STARS has invested in partnerships to simplify participation by HEIs in other metrics outside of STARS. AASHE collaborates with other programs, such as Sierra Club, Princeton Review, and Real Food Challenge, to promote a "streamlined reporting effort" that has been echoed across each update of STARS. In 2013 the STARS 2.0 version was released for HEIs to report using updated metrics and partner insights. The STARS ranking system is detailed below in methodology, changes over time, and a specific focus on food and dining scoring.

Ranking Methodology

The AASHE STARS program is the leading ranking system for higher education institutions in America. It's a self-reporting "assessment instrument" that allows institutions to measure and compare their sustainability metrics over time (Alghamdi et al., 2017). Part of STARS wide-ranging adoption among HEIs is that along with individual assessments, it also creates a shared baseline and ranking with which they can compare themselves to other participating HEIs. Institutions are scored based on assessments of sustainability across academics, engagement, operations, planning and administration. Reports are submitted by the HEIs, who have the option to score their own reports, or submit an unscored report to be evaluated and scored by AASHE STARS for finalized accuracy. AASHE STARS does perform spot checks on self-reported scores at any level, as well as a mandatory audit on any institution that scores at the top Platinum level. HEIs do have the option to not report for every category, which will not earn them points in the incomplete categories. Institutions are also able to earn added credits through undefined categories, under innovation and leadership. In scoring, the most sought-after level is Platinum for which a minimum score of 85 (out of 209) is required. Awards of Gold, Silver, Bronze, and Reporter follow, decreasing by 20 for a qualifying minimum score. Once attained, this accreditation is valid for three years (AASHE, 2020).

An analysis of the AASHE STARS program shows that, of the five category levels, Platinum is the most elite, representing 3.3% of total active (non-expired) institutions, first achieved by Colorado State University in 2015. In some ways this is to be expected, as achieving the scoring necessary for this level requires an extremely comprehensive approach to sustainability in all areas of education, operations, and facilities management. Currently (2022) there are only 11 active institutions with this

level, out of 338 active reporting institutions. The majority of reporting institutions fall into the Gold (40.2% of active institutions) or Silver (42.0% of active institutions) levels.

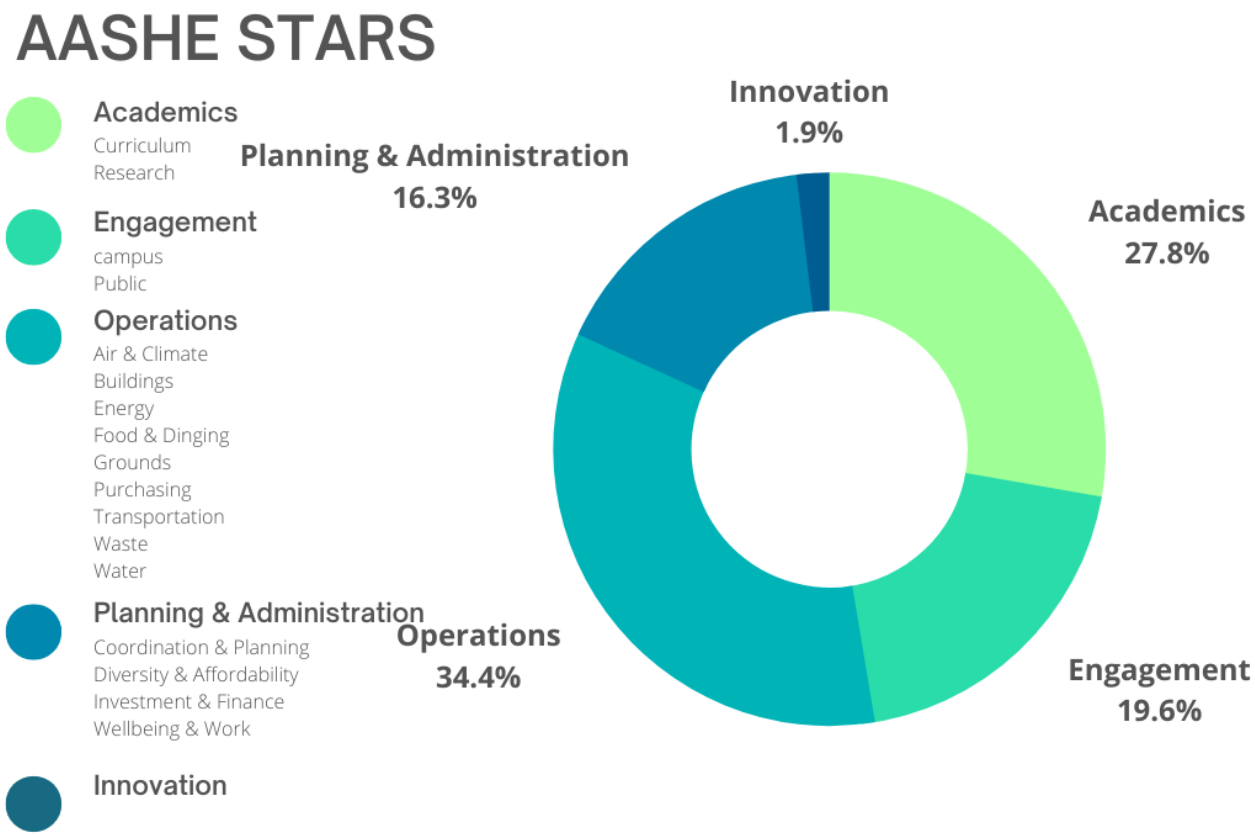

Figure 6: AASHE STARS categories by percentage of points. Data Source: AASHE, 2021a.

AASHE STARS Food-Related Categories

AASHE STARS' ranking assessment is divided over six categories, with multiple subcategories within each of the larger categories. These categories include Institutional Characteristics (not scored), Academics, Engagement, Operations, Planning & Administration, and Innovation & Leadership. STARS currently has two food-related categories that fall under the heading of "Food & Dining" within the Operations section: "Food & Beverage Purchasing" and "Sustainable Dining" (AASHE, 2019).

Sustainable Dining

The Technical Manual, which serves as the STARS rubric, outlines OP8: Sustainable Dining to provide a benchmark for all dining services including "on-site dining halls,

catering services, or food service outlets operated by the institution, a contractor, or a franchise" (AASHE, 2019).

The goal for the work being done in this sector is to, "Highlight food waste management practices, support sustainable food systems, and educate the community around food and sustainability" (AASHE, 2019). These categories are measured by change over time, and the policies and programs in place at the time reporting data is gathered. There are two criteria in reporting, including "sustainable dining initiatives" and "food waste minimization and recovery." The former scores according to food opportunities, including hosting a farmers market, purchases through disadvantaged businesses or social enterprises, hosting low impact dining events, or promoting vegetarian or vegan meals specifically (AASHE, 2019). Of the six categories listed under sustainable dining initiatives, institutions earn .2 points for each, until reaching the maximum of 1 point total. The second part, food waste minimization and recovery, has nine potential point-earning subcategories. These include participation in waste management competitions like the US EPA Food Recovery Challenge or LeanPath, in addition to best practices ranging from trayless dining, food donation, composting, or incentives for reusable containers. However, for each of the initiatives an institution practices, they are awarded .125 points, for a maximum of 1 point total. While this brief overview may seem confusing for readers who have not completed a STARS assessment, it is explained in detail in a four page document in the AASHE STARS technical manual for those who would like to better understand the intricacies of the scoring metric.

Collectively, HEIs can earn a total of 2 points in the Operations 8: Sustainable Dining category. Institutions must report on the fifteen initiatives outlined in parts one and two with a brief description of the program or initiative to receive points. Almost all participating institutions complete the Sustainable Dining section, with Platinum-ranked schools averaging 1.955 out of 2.00 possible points and Bronze schools averaging 1.31 (AASHE, 2021a). This category is utilized by most institutions and receives on average more than 50% of the points available.

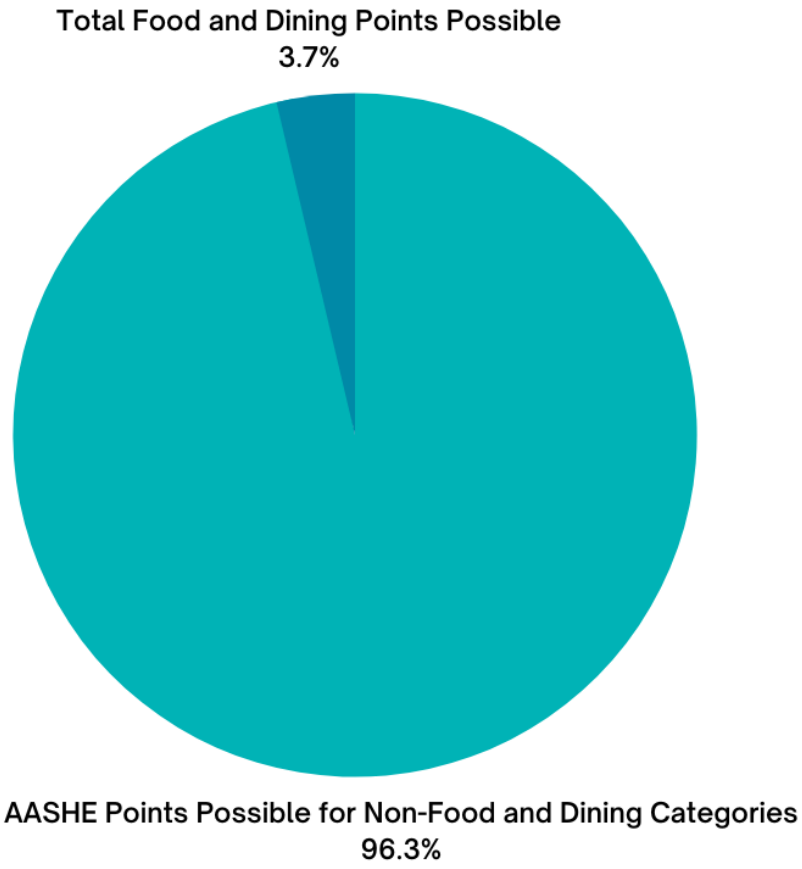

Figure 7: Food and Dining points in AASHE STARS compared to all other categories. Data Source: AASHE, 2021a.

Food & Beverage Purchasing

Operations 7: Food and Beverage Purchasing holds the bulk of potential food-related points, with institutions eligible for up to 6 points, however it has much lower participation rates and overall average scores. Similarly to Sustainable Dining, eligibility is for all dining services and clearly shows preference for innovations and "Prioritizing the purchase of plant-based and sustainably or ethically produced food and beverage items" (AASHE, 2019). Institution scores are based on total food and dining expenditures, providing budget and inventory documentation, providing significant transparency in the dining process. Specifically, required reporting includes percentages of annual food and beverage expenditures on sustainably or ethically produced products and plant-based products, a STARS mandated inventory template, methodology of assessment, and annual budget estimates, all within three years of the report. All food categories must be accounted for, including meat, dairy, poultry, fish/seafood, eggs, produce, baked goods, groceries/staples, tea and coffee, non-dairy

beverages. Institutions are encouraged to utilize outside rankings and standards to assess their purchases. For example, foods meeting standards in sustainability, fair trade, and humane animal care include Certified Sustainably Grown (SCS), Fair Trade Certified (Fair Trade USA), and Certified Humane Raised and Handled, respectively. A detailed, but not exhaustive list is available in OP 7 of the Technical Manual. Additionally, a helpful collaboration for institutions is the acceptance of Real Food Calculator results, provided outcomes are verified by Real Food Challenge or AASHE STARS. Both the Real Food Calculator and Real Food Challenge's partnership with AASHE is explained in greater detail later in this report.

One notable change AASHE implemented in 2019 to the STARS 2.2 Technical Manual is the removal of a local food definition. Looking at the manual's language it is explicitly stated that local food is not, "Qualified based solely on the basis of its point of origin" (AASHE, 2022a). The iteration of this scoring system is intended to "Reduce the social and environmental impacts of food production and help foster food security, improved conditions for farm workers, healthier soils and waterways, and secure livelihoods for farmers" (AASHE, 2022a). The lack of available points within food purchasing as compared to the overall STARS score, however, does little to incentivize institutions to strive for a greater impact in food systems change.

The lack of engagement and consequence in food and beverage related scoring is prevalent in assessing two findings across this category. First, almost all institutions, regardless of level, receive low scores in this category. Of the ten US schools that have received Platinum level status, the average score among them is 1.79 out of a possible 6.00 points. The lowest score is 0.42 and the highest is only 3.65. The overall highest Food & Beverage Purchasing score is from Sterling College (VT), at 5.95, although scores this high in this category are an anomaly. Sterling College is a small, private college whose geographic location in the middle of Vermont farm country, as well as its curriculum, and "living lab" facilities focused on ecological, environmental, and sustainable agricultural food systems, places it in a unique category unlike other colleges engaged in AASHE. Sterling College's unique success story is expanded upon in this report's Discussion section.

For all active Bronze level institutions the average in the Food & Beverage Purchasing category is 0.88 with a low of 0.05 and a high of 1.82. The Bronze level score is low, to be sure, but it is interesting to note that where 100% of the Platinum schools submitted data to this category, only 29% of Bronze schools submitted material for scoring. It is worth pointing out that when comparing the scoring between Platinum and Bronze institutions, with the exception of two high scoring

Of the ten US schools that have received Platinum level status, the average score among them is 1.79 out of a possible 6.00 points.

outliers for the former, and two near-zero scores for the latter, the remaining scoring in Food & Beverage Purchasing is quite similar between the two groups.

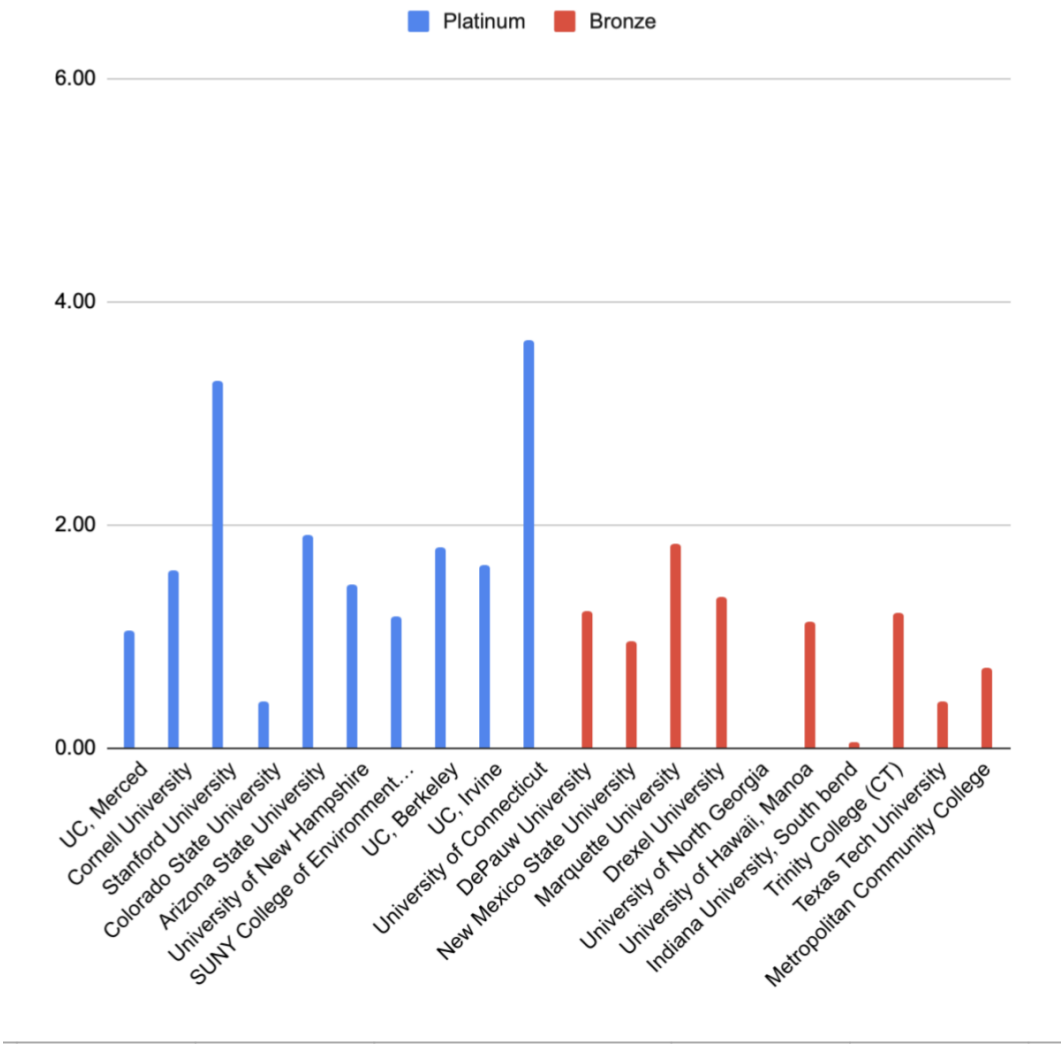

Figure 8: Comparing Platinum versus Bronze level HEI scores for the Food & Beverage Purchasing category. Data Source: AASHE, 2021a.

The second dynamic worth noting is that, according to the AASHE STARS 2021 Sustainable Campus Index, while there are some highly performance subcategories like Research, Diversity & Affordability, Campus Engagement, Coordination & Planning, and Curriculum that all score, on average, above 60%, four out of the five lowest average scoring categories are facilities-related including Buildings, Energy, and Food & Dining (AASHE, 2021a).

Reporting Process for HEIs

Our interviews highlighted the significant staff and time commitment that AASHE STARS reporting requires. One interviewee from AASHE shared:

> "Anecdotally, what I've heard is that, from institutions, reporting on STARS is not an easy lift, and a lot of the time it's placed on maybe one or two staff members […] to figure out how sustainable you are in all these different departments. And, depending on the size of your campus, it could mean that you have to talk to a department that you never really interacted with."

The time commitment can be particularly noteworthy for the food data. One interviewee from ASU noted that while Aramark can give them the data they request in a two-month turnaround time, but shared that in a previous role at a smaller HEI, they were given file folders of printed invoices to sort through. They added, "If there was just a way in their system to automatically be coding, you know, different specific food items as being aligned with the AASHE STARS, it would save a lot of time."

The same interviewee also shared that there are gaps in the utility of AASHE STARS data when it comes to informing food purchasing decisions, and shared this example:

> "If you just wanna be sort of ruthless about it and be able to say 'All right, I am willing to spend an extra $1,000 a year and the premium on organic apples is higher than the premium on organic bananas, so I'm going direct all my money to bananas and get more for my buck there'- it doesn't seem like we have that strategic ability."

Rather than encouraging a holistic embrace of sustainable purchasing practices, these gaps in the AASHE methodology can be exploited to achieve a positive ranking in the assessment, but without really changing the impetus of a food service provider's purchasing decisions.

Recommendations Versus Reality

In their 2021 Sustainable Campus Index in the section on Food & Dining, there is a block of text that informs readers that, "Institutions can use their food purchases to support local economies." As mentioned earlier, in 2021 AASHE STARS used locality as a factor in scoring in the Food & Beverage Purchasing category. AASHE STARS updated the category to clarify that only ethically or sustainably sourced local foods will be awarded points in the metric. Research into local food purchasing has shown that local food purchasing can help build place-based significance and comprehension among consumers, even if the local food has not received third-party certification of sustainable or ethical production (Barlett, 2017; McMichael, 2009). Academic

publications on food and locality have noted the additional meaning and significance created around local food can help consumers to see the true value of food in the local economy and change “food from nowhere” to “food from somewhere” (Barlett, 2017; Bové et al., 2001).

Sierra Club

Of all the sustainability metrics used to evaluate Higher Education Institutions (HEI), none enjoy a history so richly intertwined with the growth of American conservation as Cool Schools, developed by the Sierra Club. The Sierra Club, founded in 1892, was originally founded to encourage exploration of the Sierra Nevada mountains and other wilderness trails in the Pacific mountain ranges (Cohen, 1988). John Muir, a founding member of the club and its first president, is widely regarded as a prominent conservationist and as “the Father of Our National Park System." His writings initially led to the creation of Yosemite National Park, and later he was personally involved in the founding of several other parks, including the Grand Canyon and Mt. Rainier National Parks (NPS, 2017). Although Muir’s writings have come under fire in recent years for negative and racist descriptions of black, indigenous and people of color, these writings have played a large part in shaping America’s modern environmental and conservationist movements, for both better and worse (Brune, 2020; Ferdinand, 2022; Nobel, 2016).

SIERRA CLUB MISSION STATEMENT:
The purposes of the Sierra Club are to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth’s ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. (1981)

Over time, the Club became increasingly involved in advocating for policy decisions that would aid and expand conservation efforts in the US. Today the club utilizes professional federal lobbyists, but also encourages its membership base to become “citizen lobbyists,” where they are trained by experienced club members on how to advocate for environmental issues at the state level (Sierra Club, 2022a). Today, the club still works to preserve parks and wildlife, but they also work to advance a breadth of progressive environmental goals. For example, currently the club is looking at how issues of environmental justice intersect with race and gender disparities, the importance of providing healthy school lunches to all students–regardless of their ability to pay–and how to not only expand electric vehicle production in the US, but to ensure it happens in union-run shops (Sierra Club, 2022b). The Sierra Club Foundation, the charitable donation and asset development branch of the Sierra Club, also publishes a yearly Impact Report Card, which shows their progress and contributions towards the various UN SDGs (Sierra Club Foundation, 2021).

In 2006, the Sierra Club launched its annual ranking of HEIs, called “Cool Schools.” For the 2021 rankings, the Club started by framing a 15-year retrospective on Cool Schools and the evolution of sustainability on college campuses. At the inception of Cool Schools, the Club noted that both their own sustainability metric and the sustainability programs on college campuses were in their infancy. The Sierra Club noted that their first year consisted of only ranking 10 colleges, looking at qualifications such as if the school ran a garden club, or involved students in recycling efforts. In 2021, by contrast, they evaluated 325 colleges in the US and Canada and looked more closely at university efforts to utilize renewable energy sources, offer carbon-free transportation options, and evaluate how HEIs intertwine sustainability into different course offerings (O’Reilly, 2021).

In comparison to the AASHE STARS metric, Cool Schools is based on what universities have already reported to STARS. Once universities send in their STARS submissions to the Sierra Club, they are reviewed and the HEIs receive an expanded set of inquiries on behalf of the Club. Compared to STARS, the Sierra Club tailors their questions to topics that mirror their conservation efforts. On the topic of food sustainability, Cool Schools dedicates 4.5% of its questions to Food & Dining, compared to STARS 3.9%, a 14.2% difference. As another example, the Sierra Club weighs a sustainable teaching curriculum as more important than how a college engages in research, while also giving more consideration to issues around the climate, air quality, and renewable energy (Sierra Club, 2019). In explaining the reasons behind these evaluation choices, the Sierra Club states on their website:

> In the category of engagement, we give more weight to public engagement efforts, out of the belief that colleges and universities have a responsibility to encourage students to be civic actors in their communities (Sierra Club, 2019, para. 12).

This question of engagement between a HEI and its students was a reoccurring point of concern in academic publications looking to evaluate the success of different sustainability metrics in advancing sustainable practices and instilling sustainable habits in the student body (Bullock & Wilder, 2016; Findler et al., 2018; Lloyd-Stovas et al., 2018; Sassen & Azizi, 2018). To put it succinctly: do sustainability-focused institutions create sustainability-focused individuals?

After releasing their 2021 Cool Schools ranking, the Sierra Club announced they would be discontinuing the program. The press release announcing the end of Cool Schools explained that “a major reason for this decision comes down to the ways in which the Sierra Club has redefined its mission in recent years to prioritize equity and inclusion in the environmental movement” (Sierra Club, 2019). For this report we interviewed a high-ranking employee of SIERRA, the magazine of the Sierra Club. They expanded on this

decision, noting that there was a growing consensus at Sierra Club that the rankings for Cool Schools may no longer be of value to their readers. They also explained there were doubts about the ROI of Cool Schools, as it required a large investment in both costs and staff time to support what they called, “the franchise.”

“[Preparing each year’s ranking] was too onerous for us internally, and it was too onerous for the schools themselves. We got pushback from participating schools [saying] ‘Yet another survey, a multi-part survey with scores of questions.’ Seventy-plus questions, I think, is what we were asking them in 2016-2017. It was asking a lot of [HEIs].” In response to this, in 2018 Sierra Club reworked their formula to put AASHE’s STARS metrics at the heart of Cool Schools, and then rescored the information from STARS to highlight topics of particular concern for the Sierra Club. This shift reduced the required time and labor necessary to produce each year’s ranking, both for Sierra Club and the HEIs, and positioned AASHE as an “indispensable partner” for the Sierra Club.

In our interview, Sierra Club’s representative explained how the thinking around sustainability had changed since Cool School’s inception, referencing the “green bubble of the early to mid-aughts,” where sustainability efforts were often focused on individual agency, for example participation in recycling programs and purchasing foods from local farmers. At that point in time, they explained, it was thought that choosing closer food choices meant less carbon. That mindset began to change in 2008-2012, when they felt there was a shift among conservation-focused organizations and individuals that to address the scale of these environmental issues, there needed to be a push for system-wide change. While reducing food miles is still important, they felt there was a shift to look at things holistically, including workers rights, social justice, and supporting local economies instead of extractive economies.

This emerging focus on system change was a big departure from Cool School’s origins in 2006. “It was not very rigorous,” they explained about the initial ranking. “It was, ‘Let’s just find ten universities that are doing cool stuff around the environment and highlight them.’ [...] It was original reporting, but it wasn’t data-driven.” As the yearly rankings went on, it quickly shifted to relying heavily on data. But despite these changes in the metrics, food and dining services did not become a larger portion of the ranking, possibly because the metrics of measuring food sustainability are so complex. In our interview they gave the example of Colorado State University, “Which has tens of thousands of students, so their campus farm is going to be a rounding error on total production.” Despite the farm’s diminutive share towards the campus’ produce needs, the representative still sees the real value of the farm, as it enriches CSU’s curriculum with hands-on sustainability education and service-learning.

Putting a quantifiable number to reflect the sustainable value of such a farm is certainly a difficult task; is the goal to feed the greatest number of staff and students in an academic year? Or to better educate students with hands-on work that will enrich their sustainability skill sets? Among the academic publications that analyze HEI rankings, McNulty (2015) looked at multiple college sustainability rankings and found that the alumni of higher-ranked schools did not hold strong opinions on environmental conservation or sustainability. What is surprising is that McNulty found a "weak to moderate relationship" among alumni of Sierra Club Cool Schools and the alumni's strong opinions on environmental conservation or sustainability (2015, pg. 129). These findings praised the Sierra Club's ranking protocols, but also noted that the Sierra Club would follow up with graduates to encourage their continued involvement with environmental issues (McNulty, 2015). The representative touched on the Sierra Club's focus on outreach in our interview, noting that part of the reason they launched the Cool Schools ranking was to expand their audience demographics to younger readers, families, and parents interested in environmental issues.

Another reason for the launch of Cool Schools was to create "virtuous competition within higher education," they explained. But then came two events that changed the course of the ranking metric. In explaining their role in Cool Schools, they noted that they came on in the fall of 2015, right after the Sierra Club experienced a major disruption in their rankings. "There was some sort of complete data meltdown in the rankings that year," they recounted. The Sierra Club noticed this data error after the rankings had already gone to print, so they had to issue a correction and added a sticker to the front of each magazine with an updated URL code to the corrected rankings. This prompted them to analyze if Cool Schools was still worth doing, and they concluded that the rankings still held value for readers. After this decision, they launched a total reworking of the metrics to clarify questions, eliminate redundancies, and strengthen the overall evaluation process for 2016. Then, after the 2017 issue was released, they noted that, "We got pretty firm feedback from a number of schools that it was too much work between our ranking, Princeton Review, […] US News & World Report, and AASHE." That led Sierra Club to adopt AASHE's STARS data as the core of their metric.

These calls for standardization were not only heard by Sierra Club. Around the same time, Bullock and Wilder (2016) analyzed seven different HEI ranking metrics and found they often did not come to the same conclusions, leading to questions of which metric was "right." For the 2018 Cool Schools report, this decision to shift the bulk of the questions to mirror the AASHE model proved to be beneficial for not only HEI's, who preferred the streamlined assessment, but it also reduced the investment of time and labor on the part of the Sierra Club. As time went on, however, there were questions if Cool Schools was still adding value to readership. Ultimately, in 2021, the ranking no

longer seemed to offer the same utility to its audience, while still requiring a large amount of financial and staffing resources from the Sierra Club. “It was time to sunset [Cool Schools],” explained the Sierra Club’s representative. “I don’t see us restarting the ranking in the foreseeable future.”

In concluding our interview, the representative returned to the intersection of food and sustainability. “It’s a three-times-a-day choice point to [ask] how can you live within your environmental and social justice values?” Circling back to their initial comments about how the concept of sustainability shifted, they noted that food is one of the few places where individual change and system change overlap. They also pointed out the numerous knock-on effects of change in our food system, noting that the biggest driver for biodiversity loss was not climate change, but agriculture and land use. “If you care about this, the state of the climate, the biological richness we have inherited, then you’ve got that chance three times a day to make [these] decisions.”

The Princeton Review’s Top 50 Green Colleges

History and Overview

The Princeton Review is a tutoring, test prep and college admission services company. Its *Guide to Green Colleges* debuted in 2010 as a resource for students interested in attending colleges with strong commitments to the environment and sustainability. Each year, colleges are chosen based on survey responses returned by administrators. The *Guide to Green Colleges* presents information on each chosen school’s use of renewable energy, its recycling and conservation programs, the availability of environmental studies in academic offerings, and career guidance for green jobs (Princeton Review). In 2022, 420 schools were profiled, however 50 were highlighted for exceptional commitment to sustainability. The *Top 50 Green Colleges* ranking list showcases schools that “commit to sustainability from academics to career prep to campus clubs and initiatives.” Schools profiled on the *Top 50* are selected based on a combination of school-reported data and student opinion through self-reported surveys. According to an article from USA TODAY, the Princeton Review found that 66% of their high school-age college applications and parents surveyed said they found information about a college’s dedication to the environment useful in their college selection process (Klinck, 2010).

Ranking Methodology

According to The Princeton Review, the Top 50 Green Colleges are chosen based on a combination of school-reported data and student opinion, collected in the previous school year through institutional and student surveys. School-reported data is measured under the Green Rating, which on a scale of 60-99, is determined by the responses on

10 survey questions that cover the following factors: (1) whether students have a quality of life on campus that is both healthy and sustainable; (2) how well a school is preparing students for employment in the clean-energy economy of the 21st century as well as for citizenship in a world now defined by environmental concerns and opportunities; and (3) how environmentally responsible a school's policies are (The Princeton Review, 2022b).

Student opinions for the Green Colleges ranking are tracked by five-point scale responses to questions related to food and sustainability, how sustainability issues influenced their education and life on campus, administration and student support for environmental awareness and conservation efforts, and the visibility and impact of student environmental groups (The Princeton Review, 2022b). In 2012 the Princeton Review collaborated with AASHE STARS to streamline the reporting process for HEIs to reduce the amount of time that staff spend on tracking sustainability data and completing surveys (AASHE, 2021b). STARS 2.0, 2.1, or 2.2 data may be incorporated into the Green Rating metrics. Regarding specific sustainable food systems metrics, data on Food and Beverage Purchasing and Sustainable Dining from STARS make up the majority of food-related metrics data in the Green Rating (The Princeton Review, 2022c).

Times Higher Education Impact Rankings

History and Overview

Global university rankings have been part of the higher education landscape for 18 years now. The first world ranking was produced in 2003 by Shanghai Jiao Tong University in China. Initially designed to monitor internal research and performance against its competitors, the Shanghai ranking was next followed in 2004 by the World University Rankings, which was produced by Times Higher Education (Baty, 2014).

Founded In 2019, the Times Higher Education (THE) Impact Rankings are global performance tables which aim to link the actions of HEIs to 11 of the United Nations' 17 SDGs. According to THE, the fundamental goal of launching their Impact Rankings was to devise a new way of defining excellence in higher education to showcase the ways that HEIs connect with and help their communities and the world (Times Higher Education, 2021). In 2022, a total of 1,406 HEIs from 106 different countries and regions participated in the rankings to disclose how they were working towards the UN SDGs through their research, stewardship, outreach, and teaching.

Ranking Methodology

An expanded set of performance metrics was published for the 2020 Impact Rankings and included all 17 UN SDGs, rather than the 11 SGDs previously used for 2019. The

framework for the Times Higher Education's assessment is based around the premise that HEIs can support the delivery of the SDGs in four ways: research, by searching for new solutions and knowledge related to the SDGs; stewardship, by being responsible for their own consumption and sustainability; outreach, by working directly with their communities, regions, and nations; and teaching, by instilling a sustainable mindset in their students and alumni (Ross, 2019).

THE's methodology evaluates a HEI's performance on each of the 17 SDGs individually, which are then further assessed by four categories of metrics within each SDG: research, continuous, time frame, and exclusions. HEIs can submit data to be measured toward any of the goals, although any HEI that provides data specifically on SDG 17: Partnership for the Goals and at least three other SDGs is included in the overall ranking. The final score in the overall table is calculated by combining its score in SDG 17 with its top three scores out of the remaining SDGs (Ellis, 2022).

Out of the 17 SDGs, four include food systems targeted metrics that contribute to the overall Impact Rankings score. SDG 2: Zero Hunger is measured by the following metrics - research on hunger, campus food waste, student hunger, proportion of graduates in agriculture or aquaculture including sustainability aspects, and national hunger. The metric of research on hunger is worth a total of 27% of the score in SDG 2 and is made up of three indicators that measure university, academic, and research output. The metric of campus food waste is worth a total of 15.4% of the score in SDG 2. Student hunger is made up of four indicators addressing student and staff interventions to alleviate hunger and offering sustainable and healthy food choices. The metric of student hunger is worth a total of 19.2% of the score in SDG 2. THE Impact Ranking puts weight on the proportion of graduates in agriculture and aquaculture and sustainability, qualifying to up to 19.2% of the score in SDG 2. The metric tries to capture whether or not a HEI is actively teaching about these related fields. The last metric under SDG 2 is national hunger, crediting a total of 19.2% in the score. The four indicators address national food security as it only exists, "When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life." This metric offers points to HEIs that provide educational resources and networking to farmers and food producers and also prioritize sustainable food purchases (Times Higher Education, 2021).

SDG 12: Responsible Consumption and Production includes an indicator for policy on ethical sourcing of food and supplies within its operational measures metric. This counts for 1.25% of the overall Impact Rankings score, as well as 4.8% of the score solely in evaluating SDG 12. Similarly, SDGs 14: Life Below Water and 15: Life on Land include indicators giving weight to policies to ensure that food on campus from aquatic ecosystems is sustainably harvested and land-based foods are sustainably farmed. Both of these SDG indicators qualify for similar points as the policy indicator in SDG 12

(Times Higher Education, 2021). While THE's assessment of these four SDGs (2, 12, 14, and 15) are specifically addressing or related to food and food systems, they are also linked to addressing the other 13 SDGs, where what one does or does not do to achieve one SDGs, may positively or negatively impact achieving another goal (Times Higher Education, 2021).

Food-Specific Initiatives/Metrics

Inclusion of food as part of broader sustainability programs elevates the importance of food systems in overall environmental sustainability. It also offers ease and alignment for schools that want to limit the number of programs they participate in, providing streamlined data collection and reporting. However, as seen with AASHE STARS, it also means that food is only a small portion of the overall metrics and scoring system. For example, food accounts for only two categories (8 potential points out of 209) in AASHE STARS: food and beverage purchasing (6 points) and sustainable dining (2 points). When considering the potential impact that a program like AASHE STARS can have on our food system, can two categories provide substantive and diverse enough data to inform and invoke change? Or, does the complexity of our food system necessitate stand-alone programs?

In addition to ranking and certification programs such as AASHE STARS and Cool Schools that evaluate food procurement and dining as one dimension of an institution's overall sustainability, there are also programs that are specifically focused on food purchasing. Some, like the Real Food Challenge, reach beyond just environmental sustainability to take a holistic systems-level look at institutional food purchasing. Others, such as World Research Institute's Cool Food Pledge, narrows in on specific environmental initiatives in relation to food.

The food-specific ranking and certification programs discussed here offer a more in-depth evaluation of HEIs of where their food is coming from, how it's produced and the impact of their purchasing on environmental and social sustainability.

Real Food Challenge

Mission Statement:
Real Food Challenge leverages the power of youth and universities to create a healthy, fair, and green food system.

Real Food Challenge was one of the first metric programs to specifically target food purchasing at HEIs. Started in 2008 by student activists, student leadership is a pillar to Real Food Challenge's philosophy and one of the most distinctive ways that the program distinguishes itself from the others discussed in this paper. Real Food Challenge works with student leaders across the

country to shift food procurement practices at their higher education institutions through data assessment and activism. The organization provides metrics and tools for students to evaluate their university's food sourcing, and supports student groups in leading Real Food campaigns aimed at increasing procurement of food that "nourishes producers, consumers, communities, and the earth."

Real Food Methodology

The definition of what constituents "real food" is laid out in the program's Real Food Standards, which were developed by student leaders and alumni, as well as advisors from organizations such as the Center for Good Food Purchasing, Xerxes Society, Food Chain Workers Alliance, and the AASHE STARS Program (Real Food Challenge, 2018).

The standards evaluate foods across four main categories: Local & Community Based, Fair, Ecologically Sound, and Humane (see Table 1). Foods are scored across each of the four categories using a "stop light" system. Green Light foods qualify as Real Food. Yellow light foods qualify as Real Food but do not represent the fullest expression of the standard, and red light foods do not qualify as Real Food. A food item that meets criteria as "real food" is then identified as *Real Food A* if it qualifies as real food in more than one category and *Real Food B* if it qualifies as real food in only one category (Real Food Challenge, 2018; Real Food Challenge, 2020).

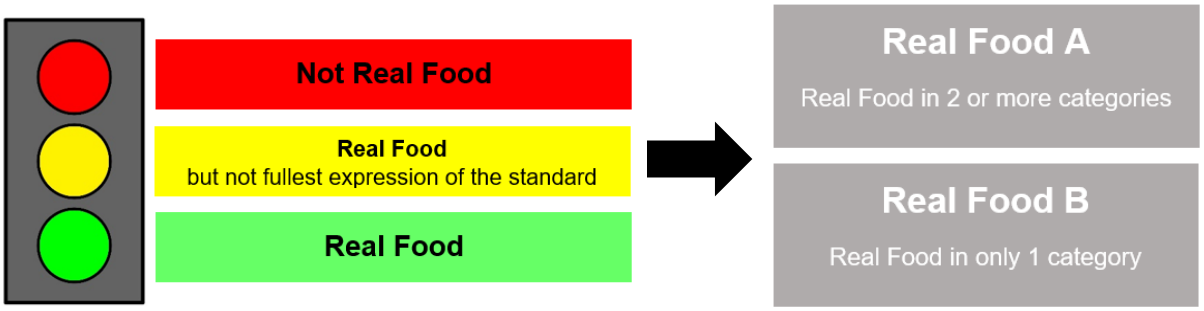

Figure 10. Real Food scoring classifications. Data from Real Food Challenge, 2020.

The fair, ecologically sound, and humane categories are based on third party certifications, such as USDA Organic. The local and community based category is not dependent on third party certification, but rather specific criteria – which students can research and evaluate for their institution (Real Food Challenge, 2018).

Table 1: Summary of Real Food Challenge Standards. Source: Real Food Challenge, 2018.

Food Category	Definition	Standards
Local & Community Based	These foods can be traced to nearby farms, ranches, boats, and businesses that are locally-owned and operated. Supporting small and mid-size food businesses challenges trends towards consolidation in the food industry and supports local economies.	Standards consider: ownership of enterprise, size of operation, distance of production, processing, and distribution facilities from institution
Fair	Individuals involved in food production work in safe and fair conditions, receive fair compensation, are ensured the right to organize and the right to a grievance process, and have equal opportunity for employment.	Recognized Third Party Certifications include: *Ecocert Fair Trade Certified, Fair for Life Certified, Fair Trade America/International, Fair Trade Certified, FairWild, Hand in Hand, Small Producer Symbol, Fair Justice Certified*
Ecologically Sound	Farms, ranches, boats, and other operations involved with food production practice environmental stewardship that conserves biodiversity and ecosystem resilience and preserves natural resources, including energy, wildlife, water, air, and soil. Production practices should minimize toxic substances, greenhouse gas emissions, natural resource depletion, and environmental degradation.	Recognized Third Party Certifications include: *Bee Better Certified, Biodynamic Certified, Certified Sustainably Grown, FairWild, Food Alliance Certified, Rainforest Alliance Certified, Regenerative Organic Certified, Salmon Safe, USDA Organic*
Humane	Animals have their mental, physical, and behavioral needs met in a low-stress environment and throughout their life are only administered drugs for treatment of diagnosed illness or disease.	Recognized Third Party Certifications include: *Animal Welfare Approved/Certified, Biodynamic Certified, Certified Humane, Global Animal Partnerships*

Real Food Calculator

The Real Food Standards are put into action using the Real Food Calculator, an online platform designed to support student leadership and participation throughout the assessment process. With support from a how-to guide, HEI students (and staff) collect invoices from the HEI's dining services operations and research the invoice line items against the Real Food Standards. They then input their research into the Real Food Calculator, which analyzes their HEI's purchasing practices. (Real Food Challenge, 2018). Each HEI's results are shared on their Institutional Profile, accessible via the Real Food Calculator website.

Collaboration with AASHE STARS

Real Food Challenge and AASHE STARS have a partnership that allows HEIs to submit their Real Food report for an institution's AASHE STARS data for their Food & Dining section. This collaboration offers a model for how HEIs can streamline their sustainability evaluation but still gather and track in-depth data on food purchasing. This collaboration is explored in greater detail in our discussion section on Alignment and Collaboration.

Real Food Impact

To date, 277 institutions, representing $474,032,219 worth of food purchases, have been reviewed using Real Food Standards and Calculator *(*Real Food Challenge, 2022*).* The 2020 Real Food Report (note Figure 11) showed how institutions in the Real Food network directed their food purchases across the four Real Food categories: local and community based, fair, ecologically sound, and humane (Real Food Challenge, 2020).

Several institutions, led by student groups, have also signed on to Real Food Challenge's "Real Food Campus Commitment," which was a commitment to a minimum of 20% Real Food by 2020. Complete results for the Real Food Campus Commitment showing how institutions, individually and together, did in shifting their food procurement and reaching this goal haven't been published yet. But the 2020 Real Food Challenge Results do show a snapshot for how and where Real Food Challenge institutions are directing their dollars within the food system (Real Food Challenge, 2020).

Among the four Real Food categories, institutions are spending the greatest amount (55.03%) on local and community based foods. This corresponds with the general emphasis that has been placed on local and regional food purchasing over the last decade (Fitch & Santo, 2016). Institutions, together, also exceeded the Real Food Challenge 20% goal for ecologically sound and humane foods. These aggregate results show the most need for improvement in the Fair food category.

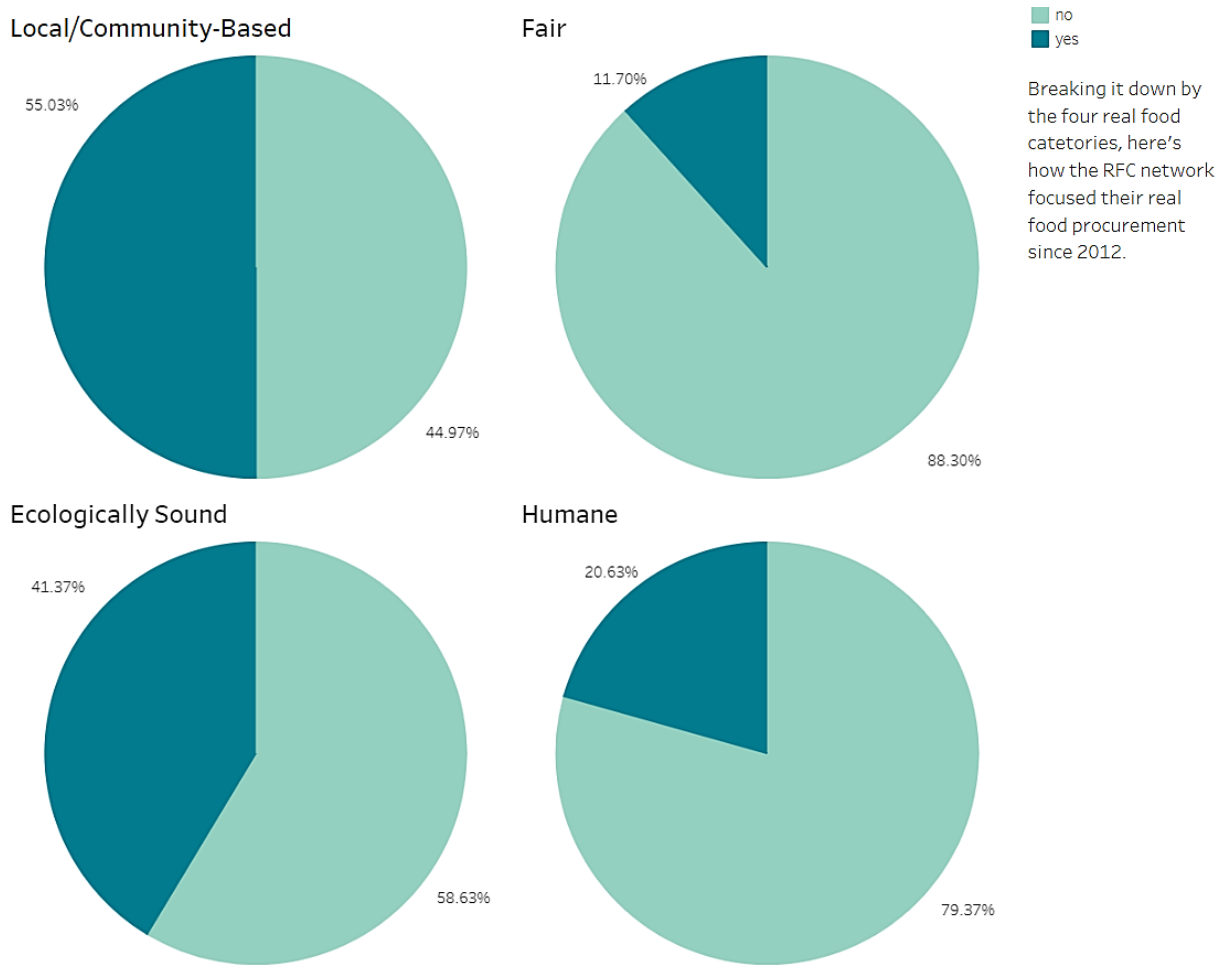

Figure 11*:* Real Food Challenge by Category. Source: Real Food Challenge, 2020.

Shifting Consumer Demand

As previously discussed, what is perhaps most unique about the Real Food Challenge compared to other certification and ranking programs is the active role of students. In a sense, the consumers are leading the effort and demanding change. But to what extent do the values and influence of student leaders translate to the broader student body? How effective is Real Food Challenge's model at shifting student behavior when it comes to food choices?

Several studies have evaluated the extent to which Real Food Challenge influences student values and diet. Research at several HEI's show the real food categories (local and community based, fair, ecologically sound, and humane) are important to HEI students and a belief that their individual food choices can support the transition to a more sustainable food system (Cachelin & Schott, 2017; Hilimire & Schnitker 2020; Porter, 2015). However, this area of research has also discovered a disconnect between, as Cachelin and Schott (2017) described it, "self efficacy and behavior." Other

factors such as taste, nutritional value, price, and appearance are more influential in determining student food choices over sustainability attributes, such as how the food was produced or where it was sourced. For example, research at the University of Vermont (Porter, 2015) found that while the majority of students were willing to pay a premium for "real food," the average premium was relatively low (a 2.4% increase per semester). Hilimire and Schnitker (2020), who found similar trends in students' "willingness-to-pay" at Fort Lewis College, recommend that HEIs implement the Real Food Challenge with "minimal price increases" and align "real food" efforts with taste and health initiatives to better appeal to consumer priorities.

Such findings underscore the need for ranking and certification programs to be implemented alongside education and outreach. Data from Cachelin and Schott (2017) provides evidence that education and marketing, namely Community-Based Social Marketing, does increase student affinity for real food factors. Research at the University of Vermont in 2015 (Porter) concluded that the program had "significant potential to transform the food system at UVM" but underscored such an outcome was dependent on food systems education for the broad student population.

Good Food Purchasing Program

Another institutional ranking program specifically focused on food procurement is the Good Food Purchasing Program. While it is not yet adopted by any higher educational institution, there is a growing number of public institutions that participate in the program and it could be only a matter of time until colleges or universities are involved. Furthermore, through a new collaboration called Anchors in Action (which will be discussed below), Real Food Challenge and the Good Food Purchasing Program are collaborating along with Healthcare without Harm to align their standards for institutional food purchasing.

The Good Food Purchasing Program provides a metric based, flexible framework that encourages large institutions to direct their buying power toward five core values: local economies, environmental sustainability, valued workforce, animal welfare and nutrition.

The Good Food Purchasing Program, run by the Center for Good Food Purchasing provides institutions with a "metric based, flexible framework" to support value-based procurement and increase supply chain transparency. The Center for Good Food Purchasing works with institutions to evaluate their food purchases across five value categories (local economies, environmental sustainability, valued workforce, animal welfare, and nutrition) on an annual basis and provides support with goal setting and progress measurement (Good Food Purchasing Program, 2019).

Good Food Methodology

Value Categories and Standards

The Good Food Standards are organized by five value categories: local economies, environmental sustainability, valued workforce, animal welfare, and nutrition. Table 2 summarizes the vision and standard for the 5 value categories, as described by The Good Food Purchasing Program (Good Food Purchasing Program, 2019). The five categories are designed to represent

Each category's standards were developed by a panel of content experts and reviewers. Following development of the standards in 2012, the program's first regular review of standards was in 2017. Standards include a mix of qualifying criteria and third-party certifications, with a baseline standard identified for each category. To be included, certification programs are ranked according to "rigor, auditing process, and alignment with the Program's vision for change" (Good Food Purchasing Program, 2022c).

Table 2: Summary of Good Food Purchasing Program Standards (Good Food Purchasing Program, 2017).

Value Category	Vision	Standards
Local Economies *Maximum of 3 points + 5 extra points*	"Support diverse, family and cooperatively owned, small and mid-sized agricultural and food processing operations within the local area or region."	Standards consider: farm size, ownership type, farm distance from purchasing institutions.
Environmental Sustainability *Maximum of 3 points + 3 extra points*	"Source from producers that employ sustainable production systems…Reduce menu items that have high carbon and water footprints."	Approved third-party certifications include: *American Grassfed, Animal Welfare Approved, Rainforest Alliance Certified Food, Alliance Certified, Sustainably Grown Certified, Seafood Watch, USDA Organic.*
Valued Workforce *Maximum of 3 points + 6 extra points*	"Ensure that food suppliers respect workers' rights to freedom of association and to bargain collectively for	Baseline requirement of compliance with basic labor laws by institution, vendor(s) and all suppliers for the

	better wages and working conditions, free from retaliation."	institution. Additional third-party qualifying certifications and product claims include: *Equitable Food Initiative, Fair Trade Certified, Food Justice Certified, Fair for Life, Fair Trade America.*
Animal Welfare *Maximum of 3 points + 4 extra points*	"If animal products are a featured menu item, source from producers that provide healthy and human conditions for farm animals."	Third-party certifications include: *American Humane Certified, American Grassfed, Animal Welfare Approved Certified Humane, USDA Organic.*
Nutrition *Maximum of 3 points + 6 extra points*	"Promote health and well-being by offering generous portions of vegetables, fruit, whole grains, and minimally processed foods, while reducing salt, added sugars, saturated fats, and red meat consumption and eliminating artificial additives."	Standards include procurement-oriented targets (eg. purchasing seasonal foods, purchasing whole rather than processed ingredients, and purchasing leaner meats) and environment targets (eg. eliminating deep frying, highlighting local food with signage, replacing unhealthy items with healthy items near checkout points and registers).

Scoring

Participating institutions undergo annual purchasing assessments, during which Center for Good Food Purchasing Program staff evaluate the institution's purchasing records across the standards. Institutions receive a numeric score for each of the five value categories, and their total numeric score equates to an overall star ranking from 0 to 5 stars. As explained by the Good Food Purchasing Program, individual scoring for each of the five categories allows institutions "to accommodate their priorities and constraints by participating at the baseline in some categories and earning additional points by going above and beyond in other categories." Within each category there are three levels, ranging from one to three points, with the higher levels worth more points.

Institutions can earn between three and six extra points in each category for specific activities of purchasing accomplishments. While the majority of the Good Food value categories are similar to or aligned with categories in the Real Food Challenge or topics reflected in the AASHE STARS program, the Good Food Purchasing Program's inclusion of nutrition as a category is unique. As the program explains it, "Improving equity, affordability, accessibility, and consumption of high quality culturally relevant Good Food in all communities is central to our focus on advancing Good Food purchasing practices" (Good Food Purchasing Program, 2017). This category looks at everything from the amount of vegetables, fruit, whole grains, and minimally processed foods served to total red meat consumption, reduction in salt and added sugar, and nutrition education offered.

Importantly, another aspect that sets the Good Food Purchasing Program's standards and scoring apart incorporate goals for demonstrated growth or progress between assessment. For example, in the Local Economies category, the standards outline a baseline target (and associated points) in Year 1 for "15% of the total dollars spent annually on food products, with a goal of increasing at least 2% per year, will come from Level 1 local food sources." Then, by Year 5, the target increases to "25% of the total dollars spent annually on food products will come from Level 1 local food sources by the fifth year of participation." (Good Food Purchasing Program, 2017). Similar targets are incorporated into the standards for the other value categories.

Good Food Approach

There are several dimensions of the Good Food Purchasing Program that set it apart from other metric-based ranking and certification programs in terms of how they interact with and support institutions.

Programmatic Analysis and Support for Institutions

The Good Food Purchasing Program takes a robust approach to helping institutions collect, track, interpret, and implement data. While AASHE STARS and Real Food Challenge requires schools to self-report, with support from either or both staff and students, the Center for Good Food Purchasing (the Center) does this assessment for institutions (at a cost), analyzing food purchasing records across the program's five value categories. As part of paying into the Center's assessment, institutions receive summary data along with specific recommendations for changes they can make in their food purchasing practices to improve their score in the future. The Center then provides ongoing support to institutions in goal setting and purchasing shifts through one-on-one technical support, resource provision, and coordination of peer-to-peer learning calls. Together, these different types of support provide a foundation for institutions to put

their data into action to improve their impact on the food system (Good Food Purchasing Program, 2022a).

Policy

An interesting dimension to this program is the foundational role that institutional policy plays in the program. Developed by the Los Angeles Food Policy Council in 2012, the program was first piloted in 2012 following policy adoption by the City of Los Angeles and Los Angeles Unified School District (LAUSD; Good Food Cities, 2022). Since then, accompanying Good Food Purchasing Policies have been passed by cities, counties, and school districts across the country requiring participation from their public institution(s). Good Food policy is considered best practice by the program for institutionalizing changes in food procurement. In most cases, the passing of policy precedes institutional participation in the program. After an institution adopts the Good Food Purchasing Policy, it then works with the Center for Good Food Purchasing to implement the Good Food Purchasing Program. However, there are also individual institutions such as Minneapolis Public Schools and Boulder Public Schools that have voluntarily committed to implement the Good Food Purchasing Program prior to policy adoption (Good Food Purchasing Program, 2022b). To support the policy aspect of their work, the Center for Good Food Purchasing provides support to local coalitions to organize and advocate for Good Food Purchasing policy adoption in their community.

Impact of Good Food Purchasing Program

Between 2012 and 2022, the Good Food Purchasing Program grew from the City of Angeles to 53 public institutions in 20 cities across the country. According to the Center for Good Food Purchasing's 2012-2019 Impact Report, these institutions contribute more than $56 million towards local economies, $21 million on meat raised without the use of antibiotics, and upwards of $32 million on foods that support valued workforces (Good Food Purchasing Program, 2021).

The majority of enrolled institutions are K-12 school districts, in addition to other city or country managed institutions such as parks, prisons and detention centers, and hospitals. No higher education institutions currently participate in the Good Food Purchasing Program, however perhaps we'll see institutions passing good food policy or choosing to voluntarily participate in the future (Good Food Purchasing Program, 2021). The collaboration between the Center for Good Food Purchasing, Real Food Challenge, and Health Care without Harm–Anchors in Action–that may change, and unify, the landscape of food metric programs for institutions, including higher education.

Anchors in Action

With so many sustainability metric and ranking programs to choose from, how do public institutions and food dining services determine which to participate in? Anchors in Action is perhaps a glimpse into what the future for alignment and collaboration among sustainability assessments, including sustainable food purchasing, metrics and ranking programs.

Anchors in Action is a new alliance between the Good Food Purchasing Program, Real Food Challenge, and Health Care Without Harm that "aims to drive food system change by unifying demand within and across institutional networks for supply chains that benefit all people, especially underserved and marginalized communities." Together, these three organizations represent more than 850 hospitals, 7,800 elementary and secondary schools, 28 public institutions, and more than 100 colleges and universities, and notably hundreds of millions of dollars in food service budgets. (Anchors in Action, 2019)

Proposed Standards

The three founding organizations established a unified framework to integrate into their own standards for food purchasing assessment. The Anchors in Action framework, which was released in June 2022, identifies four fundamental strategies, or minimum best practices, they see as being "critical to laying the groundwork for authentically and successfully implementing values-based procurement." (Practice Green Health, 2021). The fundamental strategies are:

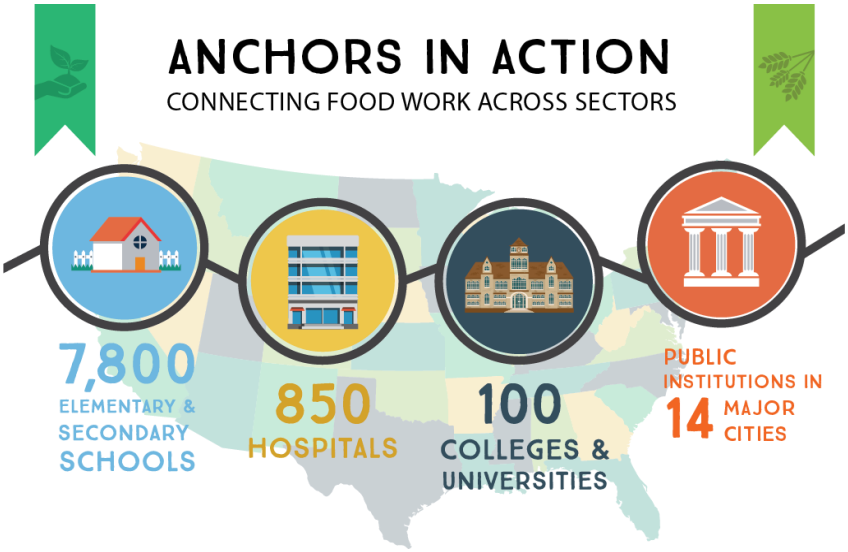

Figure 12: Anchors in Action Network. Source: Anchors in Action, 2019

- local and community-based economies
- environmental sustainability
- animal welfare
- community health and nutrition

These four strategies are grounded by three core principles: racial equity, climate justice, and food sovereignty. In an interview with a representative from the Center for Good Food Purchasing, they explained these overarching principles don't necessarily fit into a simple value framework, but rather connect to all the value categories that are critical to advance food systems work (Practice Green Health, 2022).

Using this shared framework, the three organizations plan to update their respective program standards to reflect the core values and fundamental strategies. As explained in the framework document, “Aligning our update processes ensures that the updates include a unified set of core principles, value definitions, product and supplier criteria, and institutional strategies that can serve as the foundation for each of our updates” (Anchors in Action, 2022).

World Resources Institute Cool Food Pledge

World Resources Institute (WRI) is a global environmental organization that spans more than 50 countries, with offices in the United States and across the globe and works with governments, businesses, and civil society institutions to build transformative solutions that protect the earth and improve people's lives. It focuses on solving seven major challenges at the intersection of environment and human development: Cities, Climate, Energy, Food, Forests, the Ocean and Water. Through a multiyear partnership between WRI, the World Bank Group, the United Nations Environment Programme, United Nations Development Programme, the Centre de coopération internationale en recherche agronomique pour le développement[1], and the Institut national de la recherche agronomique[2], “Creating a Sustainable Food Future: Final Report” was released and focused on technical opportunities and policies for cost-effective ways to meet food, land-use, and greenhouse gas emissions goals by 2050. These opportunities would also help alleviate poverty and would not exacerbate water challenges. The goals in focus are global and long term (Searchinger et al., 2019).

WRI reports that “changing the way the world produces and consumes food will be essential for achieving global food security, halting deforestation, mitigating climate change, and meeting other environmental targets” (Searchinger et al., 2019). The Cool Food Pledge addresses the important solution to help feed a growing population while reducing agriculture’s pressure on natural resources and the climate.

[1] Also abbreviated as CIRAD, this is translated as “the French Agricultural Research Centre for International Development.”

[2] Translated as “the National Institute of Agricultural Research.”

Launched in 2019, the Cool Food Pledge is a global initiative that helps food providers advance one important consumption-focused solution: selling delicious dishes with smaller climate footprints. The Cool Food Pledge is led by a partnership of environment and health organizations (World Resources Institute [WRI], United Nations Environment Programme [UNEP], EAT, Carbon Neutral Cities Alliance, Health Care Without Harm, Practice Greenhealth, the Sustainable Restaurant Association, and Climate Focus), with WRI serving as secretariat. It celebrates food providers committed to serving more climate-friendly food, empowers Pledge members with insights from the latest behavioral science, and tracks members' progress against the GHG target annually. Members commit to a target of reducing the greenhouse gas (GHG) emissions associated with the food they serve by 25 percent by 2030 relative to a 2015 baseline – a level of ambition in line with achieving the goals of the Paris Climate Agreement. As of Fall of 2022, there are eight higher education institutions on board: Brandeis, Harvard, NYU, University of Pittsburgh, University of Cambridge, University of Maryland, University of Texas at Austin, and Williams College.

Ranking Methodology

Cool Food Meals is an initiative launched by WRI in 2020 that complements the Cool Food Pledge by identifying meals on food providers' menus that are particularly climate-friendly (i.e., in line with 2030 GHG reduction targets). The Cool Food calculator estimates two measures of the climate change impacts of food production and consumption: agricultural supply chain emissions and carbon opportunity costs. Under agricultural supply chain emissions, the majority of these GHG emissions are related directly to purchased foods and occur on farms to produce both food and animal feed, while the minority of these emissions occur at supply chain stages between the farm gate and the point of purchase, including transport, packaging, and processing (Poore & Nemecek, 2018). The calculator also estimates emissions associated with food losses that occur at each supply chain step. Carbon opportunity costs estimate the "missed potential carbon sink" in agricultural land use if that land which was used to produce food sourced by the provider were instead returned to its native vegetation. This metric is also an estimate of the potential carbon losses to clear natural ecosystems to produce another unit of food. WRI suggests shifting consumption toward plant-based foods, which have lower carbon opportunity costs and could prevent deforestation which causes carbon to occur quickly (Waite & Blondin, 2022).

To identify Cool Food Meals on a menu, the provider submits recipe information for candidate meals, including its side dishes, to WRI. WRI then uses the Cool Food Calculator to estimate the associated food-related greenhouse gas emissions from agricultural supply chains and food-related carbon opportunity costs. If the carbon

footprint falls below the established per-meal threshold and meets nutritional standards, it is certified as a “Cool Food Meal” (World Resources Institute, 2022).

Summary of Findings

Finding #1: Poor Change Management Practices

AASHE STARS is one of the most popular higher education ranking and certification systems in North America, yet it does not communicate early or effectively when making changes to their ranking system. In speaking to a representative for ASU who formerly worked for Aramark, they mentioned having experienced four metric changes in the eight years they were with Aramark with little to no notification regarding the change. This often means that higher education institutions and their vendors who provide sustainability-related metrics are often unsure of which initiatives or efforts will yield “scorable” results. In the change from STARS 2.1 to 2.2, AASHE removed locality in procurement as a scorable metric, updating the language from “local, community-based products” to include that all local foods must be ethically or sustainably sourced. This meant that schools who had established relationships with local farms, farmers, food producers, food suppliers and other businesses were not able to receive “credit” for this work, which often comes at a higher cost and reduced profitability for the food service vendor and, by extension, their customers. Additionally, with three years between submissions, a sudden metric change can make years of progress towards a goal useless. As in the above example with the former Aramark employee, they mentioned putting a huge amount of effort to onboard new local suppliers, only to find AASHE would no longer be evaluating that metric.

Finding #2: Inability to Integrate Multi-Vendor Data

Many college campuses use multiple food service vendors across their organizations. Some may perform traditional resident hall and HUB/Student Union dining services while others may be specifically used for campus sports operations or catering services. This is primarily due to contract cycles and competitive bidding in order to attain the best pricing for the higher education institution and while it may be beneficial in that regard, it also complicates the gathering and reporting of food service metrics comprehensively across all vendors and operations of a campus.

Finding #3: Attention, Expense and Labor Limitations

There are many ranking and certifications systems that cover either a broad range of categories, or are very limited in focus, or are too opaque, or are too time consuming. Higher education institutions need to know where to focus their time, attention, and financial resources to not only accurately capture the work they are doing, but do so in a

way that generates the largest possible marketing impact and student engagement. There are simply too many metrics requiring too many manual inputs to do them all. Conversely, HEIs feel pressure to try to complete as many as possible, as they are concerned that their failure to submit to the most prominent metrics may mean exclusion of that college from certain lists, which in turn might artificially enhance a different college that is competing for the same students.

Finding #4: Low Impact on Sustainable Food Systems Development

One of our initial research questions was, “To what extent are rankings and certifications of campus food service providers (e.g. AASHE STARS, Sierra Club Cool Schools), having a positive impact on sustainable food systems development?” Our finding is that food metrics are such an inconsequential part of AASHE STARS–which is also used as the framework for a number of other assessment programs–that these metrics are not advancing sustainable food system development. This is coupled with the fact that the changes in trajectory from STARS 2.1 to 2.2 is a radical departure from any food system development that may have begun under STARS 2.1. Lastly, under the current metrics, HEIs are scoring very low in the food dining and purchasing categories, even for HEIs that rank overall at the Platinum level (refer back to Figure 8), which indicates that food system development is likely not a priority for HEIs, either. This may tie back into Finding #3: if HEIs are so limited in their resources to complete the myriad of metrics available to them, it would only make sense that they would concentrate their limited efforts into making the greatest impact and passing over low-scoring categories.

Discussion

Systems Change Calls for Systems Metrics

The United Nations' SDGs are the leading global framework for how we should be approaching sustainability, from the local to the global level. As the UN acknowledges, "Food is at the core of the Sustainable Development Goals" (United Nations, 2022b). The most direct focus on food and agriculture in the SDG framework is SDG 2, which seeks to, "End hunger, achieve food security and improved nutrition and promote sustainable agriculture." Noting that, "Achieving this goal by the target date of 2030 will require a profound change of the global food and agriculture system," the UN targets for this goal include: ending hunger and ensuring all people have access to safe, nutritious food; doubling agricultural productivity and income of small-scale producers; and ensuring sustainable food systems and implementing resilient agricultural practices (United Nations, 2020; United Nations, 2022b).

Food and agriculture are inherently connected to every SDG.

The application of systems-thinking principles to the 17 SDGs shows that food and agriculture are inherently connected to *every* SDG—from the impacts of agricultural fertilizer and pesticide use in SDG 14: Life Below Water, to the many barriers and inequities that many women farmers face in regard to both SDG 5: Gender Equality and SDG 10: Reduced Inequalities. Each step of the food chain, from field to fork, is intrinsically connected to global food security as well as resource management, economic growth, rural development, greenhouse gas emissions, and gender roles. Therefore, it is imperative that food and agriculture be central to sustainable development, and furthermore that food systems development *be seen and prioritized* as sustainable development.

Sustainable food systems development requires transformational change in how we approach the growth and production, distribution, marketing, sales, purchasing, and consumption of food–from the local to global level. This level of transformation requires a holistic look at the intricacies of the supply chains and the connections to many other social, economic, ecological, and evolutionary factors and processes (Institute of Medicine & National Research Council, 2015). This is expanded upon by the UN's Food and Agriculture Organization (FAO):

> "A food systems approach is a way of thinking and doing that considers the food system in its totality, taking into account all the elements, their relationships and related effects. It is not confined to one single sector, sub-system (e.g. value chain, market) or discipline, and thus broadens the framing and analysis of a

particular issue as the result of an intricate web of interlinked activities and feedbacks" (FAO, 2018, p. 2).

Sustainability ranking and certification programs provide incentive, framework, and accountability for HEIs to play a leading role in sustainable development. Given the significant role that food and agriculture play in sustainable development, ranking and certification programs therefore present an opportunity to provide incentive, framework, and accountability for HEIs to leverage their purchasing power and academic thinking to play a leading role in reshaping our food system. Yet, in comparing the various programs outlined in this paper, we see a stark contrast between sustainability ranking and certification programs regarding how much priority they place on food systems development and the systems-level data they require schools to collect and monitor.

AASHE STARS promotes their framework for its alignment with the UN SDGs, promoting the STARS program as "A standardized tool that higher education institutions can use to report their contributions to the SDGs" (Kistner et al., 2020). And despite food and agriculture touching on all 17 SDGs, food only represents 3.8% of the total points that institutions can earn. Even more notable is the very limited weight (quantifiable by maximum points possible) that AASHE STARS places on the Food & Dining section in comparison to other categories, such as Curriculum (40 points) or Campus Transportation (7 points; AASHE, 2019).

In our interview with a sustainability representative from Compass Group, they mentioned the change from STARS 2.1 to 2.2., "Shifted the trajectory massively in only a couple of months," in their food assessment metrics. This occurred when they stopped looking at local food and the amount of animal protein purchased, instead deciding to focus on third party certifications and the amount of plant protein purchased. The representative explained that this shift caused a moment of panic in the organization as they scrambled to quickly realign with these new standards, which they said is, "Easy from a reporting standpoint, not from an execution standpoint." They explained that as a food service organization, they are much more limited in their impact by trying to achieve sustainability goals through certifications, compared to purchasing local food. Earlier in this report we shared a similar concern from a Sustainability Representative from ASU, who used the example of their frustration in finding Fair Trade sugar packets to meet a STARS metric, unsure if they could even purchase the sugar through the supplier, let alone if it would be in a usable form.

Despite food and agriculture touching on all 17 SDGs, food only represents 3.8% of the total points that institutions can earn.

These frustrations were also the experience of two representatives from Aramark who managed ASU's Sun Devil Hospitality, who expressed the challenges they faced with this change: "Due to the size of our organization [at ASU], the process for bringing in new products or agreeing to purchase from new vendors takes significantly longer than at some of our smaller accounts with just a few locations." They explained that this sudden change left them with products they were contracted to purchase but would no longer help them in their assessment score. They also cautioned that they did not want to get into a purchasing mindset that only valued items by their points, "rather than other attributes, such as a Small or Minority Business Enterprise in the local community."

As noted in the literature review on Food Service Management Companies' ESGs (see the section on "Internal Sustainability Program Outcomes"), food service management companies operating at HEIs have already set rigorous standards for food sourcing, waste reduction, and more. But for these companies there is limited opportunity to highlight the positive food work that *is* happening within the current AASHE STARS standards, nor incentive to do more. For example, companies like Aramark and Compass Group's Bon Appetit have set internal goals related to local and regional food purchasing–in part supported by previous AASHE STARS 2.1 standard–only to receive no points under the STARS 2.2 standards. Under those same standards, where a HEI would receive no points serving local food throughout the year, they would receive points under the Student Orientation (also worth 2 points total) subcategory if they served local food only during the orientation, "And provid[ed] information about sustainable food systems during [orientation] meals" (AASHE, 2019, p. 80).

Furthermore, from an institutional perspective, there is little incentive for a HEI to require or ask more of food service management companies in sustainable food procurement and dining efforts. A maximum point award of 8 points, out of 209 total possible, is not significant motivation to HEIs to prioritize food and dining points. And the average, low scores that even platinum universities are receiving suggest that the standards are too high, too narrow, or both. Ultimately, if the standards are not driving change, what purpose are they serving? Shouldn't a year-round commitment to supporting local food systems be equally important as serving local foods on orientation day?

STARS staff recognize both the importance of food in an ever-changing landscape and the importance of standardization in metrics for best understanding the comparison between institutions. A senior program manager for STARS highlights this in regard to local food as an ongoing challenge. In our interview they note that,

> "[People have] a very emotional attachment to food. [...] It makes assessment really, really challenging when you try to really nail down, 'What is the value of

> local food and how do we measure it?' And how do we measure it in a way that is going to work in terms of a rating system like STARS with scoring points, because it needs to be equitable."

They went on to discuss the different challenges STARS has encountered in quantifying "local food," noting that defining it in a way that makes sense for different contexts has, "Proven to be pretty much impossible. We've had a couple of iterations that have tried to define local with a mile radius or some other criteria, around what local food looks like, but it just hasn't been practical." With STARS 2.2, the decision was made to stop collecting data for local purchasing.

In contrast to AASHE STARS, the breadth (and relative depth) of food purchasing data that Real Food Challenge and the Good Food Purchasing Program gather reflects a more holistic, food systems approach. While each program's methods for data collection, analysis, and long-term institutional buy-in differ, both programs' standards and metrics look at the impact of institutions' food purchasing throughout, and in connection to, the supply chain. They evaluate the intersection of agriculture and food with resource management, carbon emissions, labor conditions, animal welfare, public health, and more. Furthermore, their Anchors in Action collaboration with Health Care Without Harm represents an innovative, coordinated effort to support sustainable food systems development beyond just individual HEIs and other institutions, but broader systems level transformation.

In connection to broader sustainability efforts, the Good Food Purchasing Program and Real Food Challenge offer detailed, systems-based data metrics and food purchasing standards for institutions that align with the multifaceted, systems driven change laid out in the UN SDGs. To review these standards, please see Figure 13 (n.b.: While Figure 13 does not explicitly include the Real Food Purchasing Program, their standards are similarly aligned with GFPP). In fact, these standards go beyond the SDGs by addressing animal welfare–an issue acknowledged by the 2019 UN Global Sustainable Development Report as one of the key missing issues in the 2030 Agenda for Sustainable Development and the SDGs (Verkuijl et al., 2022). The Good Food Purchasing Program, along with THE Impact Rankings, go yet another step further by looking at nutrition as an integral connection to environmental and social sustainability – a concept also reflected in the UN SDGs. Again, while the Good Food Purchasing Program primarily focuses on K-12 institutions, we felt it important to address their role in this report, especially with the more recent Anchors in Action collaboration, which may impact the standards alignment of these organizations.

Figure 13: The good food purchasing program and its alignment with sustainable development goals. Source: Daniels & Delwiche, 2022.

The World Research Institute's Cool Food Pledge is an interesting example of a ranking and certification program that, similar to Real Food Challenge and the Good Food Purchasing Program, specifically seeks to address and elevate the impact of HEI food purchasing on food systems change. However, while Real Food Challenge and Good Food Purchasing Program look broadly at food systems metrics, the Cool Food Pledge is very narrow with its focus on calculating carbon footprints for individual meals. The program makes a very strong connection between food, sustainable development, and individual agency that sets it apart from all other programs. While a relatively new program, compared to AASHE STARS, the Cool Food Pledge offers an interesting opportunity to see how campus diners make their meal decisions when presented with information on each dish's emission impact. Ideally, if consumers–when presented with this information–change their purchasing habits towards low-emission dishes, this will buttress each HEI's efforts to instill an environmental education in its students and faculty.

Putting Data into Action

Each of the assessment programs evaluated in this study seeks to provide metrics and a standards-based framework for HEIs to measure their performance and efforts in sustainability, whether that's specific to their food purchasing or sustainability on a

broad level. This is done as a means to support, incentivize, and inform change, or in AASHE's words, "To be a foundation for a thriving, equitable and ecologically healthy world" (AASHE, 2021a). So, it's important to ask: how is the data that these programs are providing to institutions going to spur such change? And based on our research, another important question we put forth is: who is this data serving?

Schools submit extensive data to AASHE STARS, and in return AASHE manages an equally extensive database of reports where anyone can look up a HEI's report. Furthermore, participating HEIs can filter and download specific datasets and, through the STARS Benchmarking Tool, generate graphics to compare their results to other HEIs. This is an area where AASHE STARS excels–comparing and contrasting a HEI's sustainability progress against others. This data can be helpful for prospective students, potential donors and funders, as well as stakeholders in the HEI's community. And within institutions, it can help inform and place their work in the context of national sustainability efforts by providing HEIs with insights into how ahead, behind, or similarly paced they are to peer institutions. The data can provide accountability and marketing for their sustainability efforts. Many of the programs we looked at, from Times Higher Education and Princeton Review to Real Food Challenge, provide similar data for comparing and contrasting institutions, though perhaps not to the extent that AASHE STARS offers. Princeton Review provides their top fifty ranking of HEIs, and Real Food Challenge's website provides public reports for participating institutions. Meanwhile, the Good Food Purchasing Program offers HEIs with a star ranking of 0 to 5 that they can use for marketing and promotion, and Cool Food Pledge provides "Cool Food Meal" approval for marketing individual meals.

But, in order for change to happen, the data also needs to be helpful and informative for the people working behind the scenes on the sustainability programs and initiatives – such that the data is actually informing strategic decision-making. This is where the programs differ and where one can see the benefits of drawbacks of how each is designed.

How much is too much (or too little) data?

As previously discussed, the limited scope and weight that AASHE STARS applies to food and dining services at HEIs means that the data that HEIs submit to AASHE, and in turn can use to inform their decision-making, is quite minimal. Furthermore, given the program's recently narrowed lens on food purchasing metrics, the data being collected and analyzed for AASHE STARS may not be the data that a HEI feels would be most helpful for other HEIs to compare. To return to our earlier example of Bon Appétit setting a goal of purchasing 20% of their food locally, with the local food metric missing from STARS 2.2, HEIs that have contracted with Bon Appétit no longer have an easy

insight into how this compares with other institutions in their region or division. Meanwhile, an institution that participates in the Real Food Challenge or the Good Food Purchasing Program receives data that looks at all of their food purchases across different values, and can then use that data to inform their decision making on what changes to prioritize. Furthermore, their scoring structures (which are based on dollars spent) allow institutions to continue getting recognition for areas where they excel and incentivize them to sustain or expand that purchasing model in the future.

However, the multiple categories, with their corresponding data, for programs like Real Food Challenge and Good Food Purchasing provide can also be intimidating from an implementation perspective. We heard in an interview with Southern Oregon University (SOU) representatives that the extensive scope of a program like Real Food Challenge can be difficult: “It's so complicated that it makes it hard for people to make decisions. So now that we're talking, maybe focus on plant-based, cause we know that at least at some point along the chain there's less greenhouse gas emissions than if you were to do meat products.” Referencing AASHE STARS’ structure in contrast to the Real Food Challenge, the representative said they can see how something with a more simple, narrowed approach might be easier or more straightforward to implement. The interest among some HEIs to have a clear, “single-track” focus could also be a draw to WRI’s Cool Food Pledge, given its unique approach to singularly focus on carbon emissions, one menu item at a time.

Different Priorities and Approaches

From another standpoint, however, the breadth and depth of data that programs like Real Food Challenge and the Good Food Purchasing Program provide also allows for schools to make data-informed decisions while approaching sustainable food initiatives from many angles. As observed in our interviews, even HEIs and food management providers participating in the same programs and collecting the same metrics have differing thoughts on where to start and what to prioritize moving forward. As with all sustainability transitions, there is no single right or wrong path to pursue. Instead, there are several strategies HEIs can pursue to support meaningful food systems change, and these strategies will be influenced by the values these different sustainability advocates from the HEIs bring to the decision-making process. Hinrichs (2014) understood this, noting that, “The plural form of transitions recognizes the diversity of options, approaches, places, voices and historical contexts in any change that flies the sustainability flag.” Thus, data collection and analysis that supports multiple priorities and paths forward ultimately empowers HEIs to first think critically about their food and sustainability goals and, second, take innovative ownership for how to actualize their goals.

GFPP takes a unique approach to their standards and scoring by building growth into how they evaluate institutions' purchasing. In four of their five value categories, the standards for points increase over time, requiring schools to increase their purchase of qualifying foods in each category over five years in order to earn the same (or greater) amount of points. If a HEI meets an initial goal in the first year of reporting, but never sets a new, more ambitious goal by year five, their assessment score will actually decrease. By combining scores across the five value categories, however, the decision is left to the institution to decide how they will set goals and prioritize work for each of the five value categories between annual assessments. For example, an institution could choose to equally focus efforts across all five categories or choose to direct their energy more to two or three categories and maximize their points there.

The different values and approaches of HEIs can be seen in the debate over local food. One example of how HEIs are approaching food sustainability goals from multiple positions is evident by how geographic location plays into food purchasing values and decisions – particularly regarding the topic of “local.” While some HEIs and food service management companies have invested time and resources into increasing local food purchasing, this is not a top priority for some.

In an interview with an ASU Sustainability Representative, they shared: “We are in the desert, and all of our water that is used for agriculture is either imported water or fossil groundwater that we are aggressively depleting. It is consistently not clear that small local farms have either good ecological practices or good labor practices, so local is quite challenging for me.” For this individual, focusing on Certified Organic and Fair Trade purchases is the greater priority. But for a HEI in another region, where water is not a limiting factor to agriculture and where they may know that the local farms do have better ecological practices, then local purchases may be the priority.

Similarly, in an interview with representatives from Southern Oregon University (SOU), they shared that adhering to Real Food Challenge’s local food definitions can be challenging for them based on their geographic location. They are situated close to several large agricultural areas. However, some producers do not necessarily meet the Real Food Challenge’s guidelines for size (they are too big), while they’ve also struggled to find small farms that are interested in shifting product supply away from their farmers market stands to selling wholesale volumes to SOU. They also shared the added challenge of sourcing within a 250-mile radius when living in coastal states, where a good portion of that radius is ocean.

On the other hand, as previously discussed, a Chartwells representative shared that local purchasing was one of the easier, or at least straight-forward, ways for them to

make progress in food sustainability efforts. This was a sentiment that the ASU representative who previously worked at Aramark shared, noting that their background helped them to build out a number of valuable relationships with local food producers. They noted that they felt they had a personal agency in building out these relationships, something that was not possible when just looking for third party certification status.

A through line we can follow in this report is that these metrics should not exist in a binary, good/bad vacuum, but to holistically assess whether or not these metrics are helping to develop and promote sustainable food system development. In our literature review on food service provider trends, we noted that more providers are turning to third party certification as a way to inform both clients and consumers about their sustainability practices. We have also heard from these same providers that they are limited in the amount of impact they can create by solely relying on third party certification; they are restricted in their purchasing power by whether or not a product is adequately vetted through the correct certification. We have also covered how local foods are not inherently more sustainable, but that local food purchasing can help to build environmental awareness and assign a sense of place and meaning to foods that are often anonymous and placeless in our lives.

Real Food Challenge attempts to address this complicated topic by having students explore and evaluate businesses that can meet the specific criteria laid out for their local and community-based category. In this framework, the students can look at a range of vendors to see what makes sense for their particular institution. Perhaps a local, non-organic lettuce provider is a better choice than an organic provider three states over. With a better understanding of data comes better decision making, along with new opportunities. What if the HEI worked with the local, non-organic lettuce provider to become organically certified?

This example highlights the value in having holistic standards and metrics for HEIs, as well as for climate adaptation. Given how regionalized the impacts of climate change are–from severe weather events to shifts in seasonal averages for temperature and precipitation–it is growing more and more important, and necessary, to regionalize our climate mitigation and adaptation strategies (UCAR, 2022; Watson et al., 1998).

Support & Tools for Implementation

Given the overall amount and specificity of data that sustainability ranking and certification programs ask HEIs to collect, it seems that more support is needed to determine how best to use this data to inform future decision-making–particularly when it comes to the topic of food sustainability, which is quite complex. As a representative from SOU pointed out in an interview, someone working on a sustainability program–whether it's AASHE STARS or Real Food Challenge or Cool Food Pledge–may not be

an expert on the technical aspects of food systems development, agriculture in America, or the in's and out's of institutional food purchasing.

The Center for Good Food Purchasing Program recognized this need when developing the Good Food Purchasing Program framework and embedded a culture of technical assistance into their program. The Center works with institutions through a five-step process:

1) measuring an institution's baseline purchasing
2) identifying goals and developing an action plan
3) improving impact and tracking progress
4) institutionalizing Good Food Purchasing goals and
5) celebrating their successes (Good Food Purchasing Program, 2017).

They also have planning tools for institutions to use, and a searchable database of approved suppliers are already being used by other institutions participating in the program.

When comparing the Good Food Purchasing Program's design to AASHE STARS, it seems that there is both an opportunity and a need to use the enormous amount of data that HEIs submit to AASHE STARS to help higher education holistically look at their own internal systems and have an outside perspective on how they can improve their sustainability efforts. There is certainly value in STARS' Benchmarking tool, but we believe that STARS can better utilize the immense amount of data available to them to provide institution-specific recommendations to HEIs that are looking to reach more of their sustainability goals.

Similarly, a representative from Aladdin Food Service Management (a food service provider outside of the Big Three, who is currently contracted with SOU) expressed how difficult it can be to identify products that meet Real Food Challenges' standards when looking at their Sysco ordering guide, which provides limited information – particularly for things such as product origin or other values-based standards or certifications.

"There's so many points in between, like us, the experts with the Real Food Challenge and as I always say, the people pushing the buttons to order the things […] so anything you can do to just remove the complexity is better." As an example, they shared how helpful it would be to be able to look at what Real Food products other HEIs purchase from Sysco and then buy the same ones, knowing these products have already been vetted. When trying to identify new qualifying items within their existing food supply chain, it's difficult to find the information needed to determine if it will meet the Real Food standards. Additional tools and resources from Real Food Challenge could help to make it easier to swap in new Real Food items into purchases.

Cost Challenges

As previously discussed, cost is a driving factor in how HEIs make purchasing decisions. In interviews with HEIs and food service management companies, we heard consistent sentiments that sustainability efforts have to be balanced or weighed against cost. Food and dining programs are, in many cases, expected to keep prices low and within budget, and when operations are managed by a third party, there's additional interest by that company to keep costs low and within budget. So, by the same token, operating shifts that will change overall operating costs, which could include large-scale shifts in food purchasing, require approval. As explained by an Aladdin representative, new items that meet Real Food standards and are at cost or lower cost than current items are "Wins on all fronts," but it gets more complicated to make shifts to Real Food products that are higher in price. Significant changes that would require an increase in budget would require an approval by the HEI's administration. Furthermore, research looking at student willingness to pay for "real food" (discussed in further detail in the discussion on "Behavior Change and Consumer Demand") has found that the price increase that students are willing to pay is low and recommends that HEI programs keep price increase minimal (Hilimire & Schnitker, 2020).

Unfortunately, no sustainability ranking and certification program discussed in this paper can directly address the challenge that pricing presents to HEIs. This is an inherent challenge that HEIs, and all institutions and businesses, have to balance within the current realities of our food system. However, sustainability ranking and certification programs *can* help by providing data summary and analysis that can help inform and guide HEIs in deciding which areas or even specific items to prioritize when it comes to sustainability efforts. In connection to the previous discussion on technical support and resources for HEIs to make data-informed decisions, clear data and recommendations (organized with implementation in mind) will help HEIs best allocate and balance their finite budget to have the greatest impact on their food system, while meeting institutional expectations and consumer demand. However, this is an area where ranking and certification programs could do more, particularly when it comes down to making strategic decisions about specific items. The sustainability representative at ASU explained this in our interview:

> "If there was just a way in [the AASHE STARS] system to automatically be coding different specific food items…I think, it would help a lot with making strategic decisions. Because if you just wanna be sort of ruthless about it and say 'All right, I am willing to spend an extra $1,000 a year, and the premium on organic apples is higher than the premium on organic bananas.' Then I'm going to direct all my money to bananas and get more for my buck there. But it doesn't seem like we have that strategic ability."

It is also important to note that as HEIs become more proficient in sustainable purchasing practices, they may find their institutional efficiencies allow them to maintain comparable prices to their previous, non-sustainability-focused purchasing model. For example, Barlett (2017) noted in their study that one unnamed university raised meal prices by 10% in the first year of their sustainability-focused purchasing model, but found they were able to adjust their food service model to phase out this charge. The same study also found a similar situation at Yale, where the university started with a grant to offset their new purchasing costs, but found they were able to keep their pricing consistent by purchasing in-season local produce, reducing waste, and narrowing their focus to offer less high-cost options and feature local vegetables in more dishes (Barlett, 2017).

Capacity Limitations

A common theme heard in interviews was that time is a limiting factor for HEIs when it comes to participating in sustainability ranking and certification programs. The amount of time required to assemble data, create documentation, review and align with internal departments prior to approval and then submission is significant. Parts of this data collection can be automated or simplified (for example, tracking utilities usage), but other times they must be manually calculated, or the parameters of a question are open to interpretation. Higher education institutions must often weigh the benefits of one system over another, rather than compiling all data points individually that can then be used across multiple ranking and certification systems.

The challenge of staff time and effort is one factor that pushed AASHE STARS to the forefront of HEI sustainability programs. There was an interest among HEIs to reduce how many different programs they were participating in, and instead direct all their effort and time on data collection and reporting for the same, standardized program. This demand for fewer programs and a more streamlined data process, led to programs like Cool Schools and Princeton Review using the data submitted to AASHE STARS and recalculating it for their own assessments. But, as we heard in our interviews, time and effort continues to be a challenge for HEIs participating in AASHE STARS.

Inefficiencies in Data Collection

The process of tracking food purchases at a HEI can be a particularly cumbersome task, which is even further muddied by the previously noted challenge some HEIs face with several food service management companies. Two interviewees noted that, at some HEIs, this involves collecting physical, printed invoices and manually entering in all data into a tracking spreadsheet, or a long delay in receiving requested data between various parties. Considering the capacity limitations previously discussed, such an inefficient process could be perceivable as unjustifiable for HEIs or their food service management companies to do.

At SOU, they pay their student leaders for the Real Food Challenge, who often have to handle such data entry. They acknowledge that balancing cost is a difficult subject: “Last year we spent over $8,000 on student pay for the [Real Food] calculator and some other work […] it's sort of like a return on investment for us too around student engagement and retention. But if we're not able to influence [operations], I can't justify spending money on data entry. If we can make a difference, then there's more justification.” It’s understandable to see how another HEI could come to similar conclusions for non-student staff, too. Similarly, there are issues around students graduating and leaving both the college and the program, which requires training a new cohort of student workers every few years, depending on turnover.

In the interest of making it as easy and accessible for all HEIs to participate in these programs, it seems there is an opportunity for the development of programmatic tools or technology that could increase ease of collecting, tracking, and sharing purchasing data between food service management companies, their vendors, HEIs and certification and ranking programs. Additionally, these tools can help in training new students that will need to be on-boarded and replace graduating student workers. Improving programming tools can help make this process easier by reducing the amount of time required to train new student hires, as well as promoting a smooth transition between new and old hires, allowing the HEI to maintain accurate reports from year-to-year.

Sustainability Investments for Future Success

Along with the need for new technological solutions to ease the burden of reporting, HEIs should also consider the additional staff time as an investment for future success. Increasing staff obviously comes at a cost to institutions, but it is also important to consider that the costs associated with participating in these metrics may be recouped by the HEIs' improved visibility as a sustainable organization. Minutolo et al. (2021) noted that HEIs who achieved higher STARS scores also saw a positive change in their annual endowments. In this report’s introduction, we highlighted the increased importance that organizational stakeholders were placing on sustainability measures, which is echoed by the Minutolo et al. (2021) report, but it has also been shown that investments in HEI sustainability are more durable than other HEI investments. Writing after the 2008 financial crisis, Kadden (2009) noted that while many HEIs curtailed their investments, the majority of HEIs surveyed by the Sustainability Endowment Institute maintained or increased their investments in sustainability measures and improvements. Speaking broadly about corporate social responsibility, Cowan and Guzman (2020) noted that part of the real value behind sustainability reporting was the credibility and positive reputation the reporting would bring to an organization, which in turn opened up new markets and opportunities, aided in retaining both shareholders and employees, and increased profitability.

These benefits, while important, may not be enough to convince a HEI to participate in an assessment metric if they believe participating is currently beyond their capacity. If the goal is to build and retain widespread institutional participation in sustainability programs such as AASHE STARS, then it's also important to consider how such programs can be strategic in reducing the time burden felt by the institutions and pursue innovative strategies to build efficiency. It raises the question if there are additional measures that AASHE STARS can take to incentivize institutions to invest more staff time towards their reporting, and submit complete data? To answer this, we look to the Real Food Challenge and Good Food Purchasing Program – which have both taken interesting approaches to reducing the burden of self-reporting.

While Real Food Challenge also relies on institutions to self-report, the data collection and reporting process is designed to be led by students. And, as shared by a Real Food Challenge representative, some HEIs (who participate in both Real Food Challenge and AASHE STARS) have found the engagement of students to be a beneficial way to mitigate staff capacity issues. Taking a step back, Real Food Challenge's student engagement process is also an interesting example of how such programs can strive to be creative to make programs more approachable and manageable for institutions. In the case of the Good Food Purchasing Program, the Center for Good Food Purchasing has a team of staff dedicated to institutional assessment, where they take the raw purchasing records and the analysis for the institution. While this service comes at a cost to the HEIs, it does take the burden of producing these individual institutional reports off staff. This design also helps to address the inevitable challenge of staff (and in the case of Real Food Challenge, student) turnover, which can be a setback to HEIs when trying to sustain long-term momentum.

Alignment and Collaboration

We are seeing the need for better standards alignment and industry-wide collaboration to streamline and strengthen these programs and their impact on food systems change. The goal of this would be to create a more unified approach to how HEIs can play an important role in sustainable food system development.

Standards Alignment

We have come across this in multiple academic publications calling for standardization of assessment metrics to aid HEIs in pursuing clear, quantifiable goals around sustainability (Lloyd-Strovas et al., 2018; McNulty, 2015; Sassen & Azizi, 2018). As Bullock and Wilder (2016) said, there is a "lack [of] convergent validity" among the different metrics. This is also a topic we heard in our interviews, where there was a growing pushback from HEIs on the myriad of different requirements unique to each assessment survey. While there has been a concerted effort to improve the standards

alignment and streamline reporting processes for HEIs, it is still an area that requires refinement. The Appendix section to our report contrasts these different requirements and assessments in greater detail.

This lack of alignment also exists at the vendor-client level, where the same food service provider may face different requests and sustainability requirements from HEIs, even in the same region. This was illustrated in our interview with a sustainability representative from Compass Group, where they noted that while Compass Group has their own sustainability goals and vision, part of their model is to meet the needs of their customers, which involves making their different accounts meet the goals of the HEI they are serving. This creates a wide range of sustainability goals and procedures, even though these providers all come from the same parent company. As they stated in our interview, “When you have seen one Chartwells account, you’ve only seen one Chartwells account,” as they are forced to fit their client’s priorities, rather than following Compass Group’s ESG goals and sustainability initiatives. This lack of integration is holding both the HEIs and the food service provider back from achieving sustainability goals, which they could likely not only achieve, but also surpass by collaborating together and utilizing each organization's skills and resources.

Standards alignment is beneficial for institutions, as it simplifies the decision-making process when it comes to sustainability initiatives and the decision of which program–or programs–to prioritize and participate in. But it also has the potential for sending significant ripples throughout the food system by setting more clear and consistent priorities and expectations for all food system players to follow, including food service providers, manufacturers, distributors, and more. This goal of broadening the impact is the reasoning behind Anchors in Action, the collaboration between the Good Food Purchasing Program, Real Food Challenge, and Health Care without Harm.

AASHE STARS & Real Food Challenge

As covered earlier in the report, AASHE has a long history of collaboration with different assessment metrics, from Sierra Club to Princeton Review. While they are no strangers to this idea of collaboration, it’s important to note that the most effective collaboration we see is through the partnership that AASHE STARS and Real Food Challenge have. As previously noted, the two programs have an arrangement that allows HEIs to submit their Real Food Calculator data for their AASHE STARS report, thus eliminating the need for HEIs to track and submit additional data to AASHE STARS beyond the purchasing data they are already evaluating for Real Food Challenge.

According to a representative interviewed from Real Food Challenge, this system has been beneficial for both Real Food Challenge and AASHE STARS. “We’ve definitely

had schools be introduced to STARS first and then have gotten to learn about the Real Food Calculator from that channel and have decided to use our programming for their reporting as well." For some HEIs that find the AASHE STARS reporting process to be a heavy lift, they see benefit in bringing students into the data collection process and using the Real Food Calculator. In our interview, the Real Food Challenge representative summed up their experience on assessments and food systems:

> "From AASHE STARS, we've heard that, historically, the food and beverage section of their report has been difficult to evaluate because our food system is pretty opaque when it comes down to it. So just doing any type of research takes time and a lot of attention that maybe isn't able to be placed there because there's so many sections on STARS. So using the Real Food Calculator, where there is a process for that data to be evaluated through Real Food Challenge it has provided a lot more rigor to STARS, or at least to institutions to use the calculator to fulfill that part of the reporting."

Input from Multiple Vendors

The challenge of collecting holistic data is further muddied by the reality that there are often more than one food service vendor on a campus. For example, when we interviewed a sustainability manager for ASU, they explained there were three food service vendors for the campus: Aramark is contracted for the dining halls, Sodexo for sporting event concessions, and Atlasta for the University Club and certain specialty services. Ranking and certification systems often require that a single vendor be listed for a specific category (like food service) which means that if an additional vendor could potentially offer a higher scoring metric, it is not considered in part or in whole when self-reporting. Also, in spite of the various "codes of conduct" and sustainability requirements that companies like Aramark, Compass and Sodexo hold their suppliers to, it is difficult to impose sustainability requirements on their vendor partners, such as in efforts to compel the Chick-fil-A on campus to discontinue the use of Styrofoam cups, as an example. These multitudinal inputs are a problem when it comes to reporting and being transparent to stakeholders about a HEI's true impact on sustainability.

The Missing "Back Half" of the HEI Supply Chain

Another important point brought up in an interview with an Aladdin Food Service Management representative is the need for collaborative work with what they described as the "back half" of the supply chain: food service suppliers. They pointed out the challenge they've had with finding products that meet Real Food Challenge's standards via their primary supplier, Sysco. This has led them to purchase some products outside of their primary supply company; for example, they just started working with a local, organic coffee roaster that qualifies as Real Food. While this has been successful, it's been difficult to find local suppliers for other Real Food products. Furthermore, they

have quotas that they have to meet with some of their national vendors, per their pricing contracts. These quotas present a challenge to food service providers by limiting how much leeway they have to purchase from alternative vendors, and what they're actually able to supply to us that meets the food purchasing standard they're looking for. The representative went on to elaborate:

> "It's something that you can do to make a public statement that we, as a university, are going to be dedicated to getting 20% [Real Food]. But if the goal of the Real Food Challenge was to make institutional change within agriculture, then there was a whole back half conversation that was not happening between our company or a food services company and national vendors. You know, it's one thing for me to say 'Yeah, I'm gonna do everything I can to source off of your website to get as much Real Food in here as possible.' But if there aren't those high-level boardroom meetings between executives with my business and the food supplier business, then it's lost in this minutia of data points and slight percentage differences on a spreadsheet somewhere."

While some food system change advocates argue that the long-term sustainability of our food system is dependent on dismantling the control that national suppliers have on our food system, building collaborative relationships with food service companies and vendors could nonetheless be a step in the right direction and a more immediate strategy to get more sustainable food into HEIs (Ambikapathi et al., 2022; Howard & Hendrickson, 2021; Metelerkamp, 2014). This would support the fast-approaching 2030 target for the SDGs and help HEIs in their Real Food Commitments to reach measurable progress within a certain amount of time. In SOU's case, they have a goal to reach 20% Real Food purchases by the end of 2023. More intentional collaboration between programs like the Real Food Challenge, food service management companies, and large food service suppliers could help remove barriers that institutions like SOU are facing.

While there is already great collaboration internally between SOU and their food service management company, there needs to be top-down alignment of goals to allow all HEIs and their contracted food service providers to increase the amount of sustainable food they purchase. In speaking with a Representative from Center for Good Food Purchasing, the expanded upon some of the unique challenges they faced with transparency:

> "In the middle of the supply chain, particularly in certain sectors not designed for that level of transparency - everybody's protecting their sources. It's proprietary information and so it can be a pretty heavy lift from a labor perspective to

> generate this data. [...] So that's a real challenge and we've been investing in strategies around vendor education and engagement to really test whether this idea of bringing them into the "why" and creating more of a sense of collaboration and partnership in the program and the purchasing goal will help us increase that data quality over time. "

Role of Policy

The United Nations SDGs and their 169 targets include aims to strengthen accountability and rule of law, address corruption, inequities across gender and marginalized groups, and promote opportuning and inclusive economic growth while addressing climate change and sustainability (Pipa et al., 2022). The goals offer a shared framework to improve the coherence of US priorities and interventions across national policy. Policy ranging from local to national levels support the greater picture to achieving a more holistic and inclusive sustainable future. Leeuwis et al. mentions, "Food system transformation requires more than obtaining science-based understanding and analysis of how components interact" (2021, p. 1). Governance interventions as a "Reorientation of investments and rethinking of the role of policy can alter, reproduce or produce desirable or undesirable food system outcomes" (Leeuwis et al., 2021, p. 1). Policy can be a driving force to sustainable development on institutional, local, regional, and national levels. Incentivizing policy by awarding points in sustainability ranking and certification programs, as THE Impact Rankings does with metrics within SDG 14: Life Below Water and SDG 15: Life on Land, can nudge HEIs to make impactful policy changes.

State level policymaking impacts institutions that receive state funding, such as land grant colleges. An example of state-adopted policy driving sustainable change is Maryland's adoption of The Greenhouse Gas Emissions Reductions Act in 2016. As a representative of Cool Food Pledge recalled, "Policy is an important part of the puzzle" and with the organization's ability to measure metrics around foods with less greenhouse gas-emissions, it can "seek to influence policymakers with robust science-based data to reduce the climate impact of food." Through the state's commitment of reducing greenhouse gas emissions the University of Maryland, a land grant college, became the first higher education institution to join the Cool Food Pledge in 2019 (World Resources Institute, 2019).

Policy initiatives can also drive change at the county and city level. An example of county-level policy initiatives includes Los Angeles County, which in 2012 experienced a local policy adoption that made a sizable impact in sustainable development. The Los Angeles Unified School District (LAUSD) adopted the Good Food Purchasing Program (GFPP) which increased demand for "equitably produced products." The adoption of

this policy allowed LAUSD to purchase more food from local small and mid-sized farmers, with 50-72% of its produce sourced within 200 miles (Good Food Cities, 2022). As a representative of the Center for Good Food Purchasing said, “Without policy change, there is no way to level out the playing field.” From this adoption, one of LAUSD’s vendors and one of California’s main school food service distributors, Gold Star Foods, made its own operational changes to meet the GFPP standards. A significant change includes sourcing sustainably grown wheat from California farms and changing its in-house recipe for bread products. Although this shift was influenced by LAUSD’s local adoption of GFPP, many other K-12 customers within the state are benefitting from this unintentionally (Clark, 2016). This example shows how ranking and certification programs can help institutions and corporations achieve sustainability target goals. In this example, the adoption by the city of Los Angeles and LAUSD influenced a change in Gold Star Foods.

Looking beyond government policy, there is also a huge opportunity to drive sustainable development within corporate policies. In 2019, Aramark introduced their sustainability plan and subsequent impact report in “Be Well. Do Well,” which outlined the company’s goal to, “Make a positive impact on people and the planet by working to reduce inequity, support and grow local communities, and protect the planet” (Aramark, 2021a). This commitment was strengthened by its partnership with WRI’s Cool Food Pledge in which Aramark announced they will offer 350 new menu choices sealed with a “Cool Food Meal” approval in HEI dining services (Kerencheva, 2022).

According to the International Institute for Sustainable Development (IISD), HEIs are expected to contribute to their local and the global communities by way of teaching and instilling knowledge and awareness around the SDGs to their students (Grund, 2020). The 17 SDGs require adoption and policy changes within the system and that requires the commitment of HEIs so policy change on this level is crucial. During the previous two decades, an increasing number of HEIs have become involved in embedding sustainable development into their academic systems (Lozano et al., 2015). Although HEIs have made internal changes around sustainable development as a whole, these changes have been largely focused on climate change mitigation and are seldom integrating food system changes, even though they are necessary to meet greenhouse gas mitigation targets and come with major health, social, and environmental benefits (Cleveland & Jay, 2020). In March 2022, the University of California (UC) through the Office of the President, adopted the “Policy on Sustainable Practices.” This policy initiative sets out multiple goals in twelve different action areas, including sustainable food services, for all UC state schools. The initiative uses the AASHE STARS definition in outlining what constitutes sustainably and ethically produced foods for state campuses, with a goal for the campuses to be procuring sustainable food products for

25% of their purchasing needs by 2030. To date all ten of the UC schools have earned at least one rating in AASHE STARS, indicating that they are already somewhat familiar with the purchasing requirements (St. Clair, 2022). This initiative, which is based on a collaboration between state policy makers, HEI, and AASHE STARS, is a perfect example of how policy can drive food system change not only at HEIs, but also at a state or regional level.

Behavioral Change and Consumer Demand

Behavior change is a critical piece to sustainability work, particularly when it comes to food. HEI's decision to switch to solar power doesn't necessarily impact an individual's day-to-day behavior, but a HEI's choices around food can make an impact three times a day. Whether self-operated or managed by a food service company, consumer behavior and demand are driving factors behind the food that a HEI serves. So, to what extent does food sustainability align with consumer demand at HEIs? Are students, HEI consumers, asking for – and willing to pay for – real food? In our interview with a university representative from ASU, they shared these thoughts on behavior change:

> "I think the behavior change avenue is huge here. If I look at how our campus operates, behind the scenes… we can change out everyone's shower heads, put up solar panels, deal with energy water stuff. I don't have direct control on how you get to campus, what you throw away and what you eat. So the behavior change elements of introducing people to a plant-forward diet as well as whatever waste things are connected to food, is the next frontier that we need to get through and we need to figure out how to do it. We can put up posters and those are great for awareness. But posters are not gonna make people change their behavior. So we need to do peer-driven campaigns to get people to try that plant-based burger."

As noted in our literature review, the Belgrade Charter called for a global push towards Environmental Education, but in the decades since then the research has noted that fostering environmental awareness and changing behaviors to reflect a sustainability-conscious mindset is a difficult task for most HEIs. Lloyd-Strovas et al. (2018) noted that of the 1,912 HEI students they surveyed in their study, the majority did not possess a developed environmental literacy. Their conclusion was to build an environmental literacy program for all students, building an institutional focus on environmental education that will be shared by all students, regardless of major. This was something we heard in our interviews, particularly with the Sierra Club and Sterling College, who indicated that all students–from business majors to biologists–should have introductory classes on the environment, earth science, and ecological awareness. The representatives from Aramark and Sun Devil Hospitality saw environmental education

around food as a potential focus point for generating buy-in from students on sustainability initiatives: “Continuing to educate students on the environmental and societal impact of their food choices will be critical in growing the focus and collaboration for sustainable food-specific programs at ASU.” While we will look at the ways Sterling College has achieved this later in our paper, it’s important to note that academic papers have also called for a base-line introduction on environmental education for all students, noting that most HEI’s do not successfully integrate their own sustainability practices and vision into the lived experience of their students (Cox, 2015)

Food service providers trying to navigate a HEI’s vision for sustainability, institutional financial constraints, and consumer preferences may find themselves in a balancing act as they try to attend to such different–and at times conflicting–requests. In our interviews, food service providers mentioned they would be happy to serve more organic foods or plant-based meats, but there is still a strong preference from students and faculty for low-cost college staples like burgers, pizza, and meat-centric entrees. In our interview with two representatives from Aramark who handle ASU’s Sun Devil Hospitality, they explained, “Our menus are designed and developed with student satisfaction as the top consideration.” They did note the rising interest in sustainable food choices, but also recognized the reality that, “The issues of affordability and growing food insecurity are also of top concern among students and our clients.” Additionally, personal tastes in foods are especially hard to change, as food not only touches on issues of preference, but also culture and socio-economic standing (Vermeir et al., 2020). Several studies at HEIs have explored this question of consumer behavior and demand, particularly in regard to the real food criteria of Real Food Challenge (Cachelin & Schott, 2019; Hilmire & Schnitker, 2020; Silva et al., 2020). For instance, Hilmire and Schnitker (2020) attempted to quantify the amount of money students would pay for “real food,” as defined by the Real Food Challenge. They ultimately did not find a general consensus on how much more “real food” is worth in their study, but in the survey instrument they did find something interesting: students who came to into the study with existing ideas about food sustainability and a desire to see their food choices reflect their personal belief were more likely to pay more for “real food” (Hilmire & Schnitker, 2020). This lends credence to the idea that increased environmental education among students can help HEIs increase demand for “real foods” while also explaining the additional costs associated with these foods.

Cachelin and Schott (2019) note that a majority of current college students believe that their individual food choices can push for positive systemic change in the global food system. Their article went on to look at Community-Based Social Marketing (CBSM) as a way to deal with the lack of success in information-spreading campaigns; as ASU’s University representative explained, posters and awareness aren’t enough. CBSM is the

concept of driving behavioral change by removing barriers to the desired behavioral change, while also highlighting the personal and social benefits that come from embracing this change (Cachelin & Schott, 2019). Our interview with WRI's Cool Foods Pledge also brought up this concept, noting their work trying to reduce the consumption of ruminant-based meat. In our discussion, they noted that getting consumers to shift to climate-friendly diets is a critical part of their climate mission. Our interview with the Sierra Club also reinforced this idea, with their representative noting the power individuals have to make an environmentally educated decision three times a day with their meal choices. Increasing availability of these plant-based foods in food service environments goes a long way to increasing access and removing barriers towards adoption in consumers' diets, as new consumers will not be tasked with preparing a product that is initially unfamiliar to them. "So [we're] supporting not only innovation in the plant-rich world," they explained, "But also implementation in terms of getting these foods into food service settings and using behavioral science to make those foods more appealing." As studies have shown, while more and more consumers are interested in sustainable foods, the major driver for consumers to positively rank a new dish is the appeal of taste and appearance (Silva et al., 2020; van Bussel et al., 2022). To achieve this end, they have created the Playbook for Guiding Diners Toward Plant-Rich Dishes in Food Service, which helps food service providers successfully prepare plant-based meals and entice diners to consider changing their eating habits, one meal at a time. Our interview with representatives from Aramark and Sun Devil Hospitality also had an interesting approach toward "plant-rich dishes," explaining that "'Plant-Forward' menus are not necessarily vegan or vegetarian; rather they contain a higher percentage of plant protein compared to animal protein, or the animal protein is offered on the side." This allowed them flexibility by not excluding meat but taking it away from the center of the plate to help reduce the entree's overall emission ranking.

Another successful strategy has been tying a desired social change to popular campaigns and narratives that hold special significance for diners at a HEI. Part of the challenge with this strategy is knowing when to seize the opportunity to collaborate with these local campaigns to make the greatest impact. In our interview with a representative from Real Food Challenge, they shared that Real Food Challenge looks at campaigns as a cycle that moves in waves. As they explained, activity builds to an escalation point, after which activities slow and people process and absorb the culture change they want to see:

> "With Real Food Challenge, we want to support that organization and …ensure that the tools and resources that we offer, are making sure that a narrative can be crafted towards whatever priority a local campaign has. So if a priority is to invest more in BIPOC producers around the institution, then we need make sure

> that our tools and resources can capture that type of data - like how many BIPOC producers are being supported by an institution or what percentage of the food budget is going towards them. So that then, a story can be crafted."

This outlook highlights the long-term commitment of pursuing behavior change: it takes time. It also demonstrates how data from programs like Real Food Challenge can be used to advocate for and support behavioral change through narrative sharing. Data from sustainability metric programs alone won't bring about change. It's a matter of how HEIs are choosing to put their data into action. Research has shown a global movement towards interest in sustainable and ethical food production, which is especially prevalent among the newest generation of college students (Silva et al., 2020). Today, HEIs are presented with a unique opportunity: they have the data showing the need for increased sustainable dining options and they have an interested audience that is receptive to new, sustainable initiatives. What is needed for the next step is for HEIs to move forward on harnessing their size and reach to tie systemic change of food production to the desires and tastes of students' individual choices.

What Does Success Look Like? A look at STARS' top ranked HEI for Food and Dining.

To better understand what AASHE STARS is looking for in their sustainability metrics, we interviewed a top administrator at Sterling College in Craftsbury, Vermont. In 2021, Sterling College ranked #1 in STARS "Food and Dining" category, scoring 99.4% in the category, compared to 89.0% for the #2 spot (University of Winnipeg) and 70.6% for #3 (University of Connecticut). During our interview we looked at what set Sterling College apart, while also exploring how other HEI's could find success in Food and Dining from their model. Sterling College was founded in 1958 as a boys' preparatory high school, but began to add short, college-level courses in 1971 and expanded in 1975 to year-long college courses on agriculture, forestry, and wildlife management.

Since Sterling's inception, they have never outsourced their food service program, although the concept of their program has certainly evolved over time. "How we prepare food, with what kind of intentionality we prepare food, and sourcing has evolved over time," explained their representative. "The quality has always been good, but sourcing was a thing we weren't paying attention to." While the college established a farm in the 1960's, it wasn't until 2011-12 that Sterling looked to utilize the diversified farms around them for the bulk of their food sourcing. Part of this change did stem from Sterling's interest in sustainable sourcing, but it also mirrored a groundswell in smaller, local food

operators. “People are trying to put infrastructure back in place, with smaller, local, regional production,” they said, noting the rise of small grain mills and cheese makers in Vermont. Today, Sterling works with a Vermont-based cooperative distributor that acts as an aggregator to bring in products from across the state, allowing them to purchase locally and not rely on a larger broadline distributor like Sysco or US Foods.

> “Understanding is the precursor to care.”
> Sterling College Representative

This switch to purchasing locally has brought both additional price costs and production labor to the university’s dining program, but Sterling’s representative notes that there is a great deal of commitment to sustainability on the part of the staff and students. “There’s a huge amount of buy-in [to the sustainability mission] here,” they note, as they elaborate that some of the issues that have arisen from local purchasing haven’t been quite so clear cut. “It was decided that whatever cost comes along with local is worthwhile, but how do you meet the needs of your students around cultural issues?” They explain that people still want to have oranges and bananas–not exactly backyard fruit in Vermont. So, they do make compromises to make people feel healthy and nourished. The farm itself has also taken some figuring out to incorporate it more fully into dining operations. The biggest difference is the added labor that the produce from the farm requires. As an example, the squash grown on the farm is more labor intensive than cut and frozen local squash from the cooperative. Even purchasing produce from the cooperative requires some flexibility, as sourcing from small farms doesn’t offer up the endless and seasonless options one would find with a larger vendor. But being able to pivot and alter plans depending on seasonal availability is a necessary adaptation the kitchen has become used to at this point. They just had to: the rocky, hilly terrain of Vermont favors small, mixed-use farms, rather than the endless fields of identical row crops found in the Midwest. “Our agency of agriculture very much values small family farms, because that’s what our landscape can support,” they explain.

Despite these challenges, Sterling College has actually found ways to expand the use of both their garden and kitchen as a way to give back to the local community. They annually grow out a number of specific crops to help replenish the seed banks of the Abenaki community, the indigenous people of what is now New England. Starting in 2018, this program is a partnership of Sterling College with the nonprofit organization *Abenaki Helping Abenaki* and *the Seeds of Renewal Project.* Through this partnership, heritage corn, beans, and squash are grown out each year to ensure the tribe has enough to grow for food on their own farms, as well as a surplus of seeds as a backup measure against losing the diversity of these heirloom crops. In another development, Sterling has upgraded their kitchen to comply as a state-approved processing site. This

allows local farmers to come in and use the facility to further refine their produce into value-added products and sell them directly to consumers. Examples of this would be jellies, jams, salsa, and canned fruits and vegetables.

Sterling College is a federally recognized work college, one of only ten in the US, where students are required to work at the college as a way to offset tuition costs (Work College Coalition, 2020). During our conversation, the representative mentioned that Sterling's position as a work college goes a long way in making students understand the systems behind the college's operations. When students give feedback about the college, that feedback is also a reflection upon their peer's work. For example, in one student meeting, the student in charge of vacuuming the dorms asked their fellow students to please be more conscientious about removing their boots outside. At the time, it was mud season in Vermont, and muddy boots could bring in stones to the dorms, which would damage and eventually break the vacuum. While a small example, Goodwin explained that these types of conversations would occur throughout the college, including the kitchen and the labor required to turn the garden's harvest into a meal for that day. In today's environment, when so much of our food system is obscured from us or happens overseas, this insight is incredibly valuable to Sterling's students to take a sustainability mindset around issues of food. As they put it: "Understanding is the precursor to care."

Academic publications have stressed the importance of this type of deep immersion in sustainable understanding, along with noting that most HEIs do not provide the same depth of experience found at Sterling. Cox (2015, p. 1) noted that, "[t]his formal education may also fail to provide the tools for the successful integration of sustainability practices into students' lives. The fullest experience is achieved through the immersion of students in a culture of sustainability that permeates the campus." Lloyd-Strovas et al. (2018, para. 2) echo this statement, explaining that "[o]ne major goal of [environmental education], as established by the Belgrade Charter and adopted by the United Nations, is to develop an environmental literate citizenry." Sterling's representative, in their own words, also touched on this idea in our interview regarding the deep values around school and nutrition at Sterling: "We've institutionalized our shared values around food."

In our interview, they also noted that Sterling's ideas around sustainability had shifted since their time there as a student in the 90's. At that point, there was a large focus on what individuals could focus their energy and efforts on to bring about change in the world. But as time went on, and the climate situation continued to deteriorate, there became a call for large-scale, holistic sustainability. This change resonated with our conversation with the Sierra Club: individual agency, while important, could not meet the

size of today’s challenges and overarching system change was now required. “Higher education ignores the stuff that students probably need the most for a changing climate.” explained the representative. “It has to be a cultural, communal value. It has to be on an across-the-board scale [...] You have to have that set of values to lean into these things, that things cost more, that requires more coordination, or is more likely to have a wrinkle in it. Whereas a system that is so big that it can buffer that experience you get something that’s very constant, but not necessarily seasonal or a reflection of what’s actually happening at the farms around you.”

In the larger discussion around HEIs and food system sustainability, we do wonder what type of lessons can be taken from Sterling's success, both on its own campus and with the national recognition in AASHE STARS. Are larger HEIs so big that they buffer out the chance for students to experience lived sustainability? Or is it not the size of the HEI, but the way in which they compartmentalize food far away from issues like sustainable governance, renewable energy, and carbon credits? In our discussion on behavior change we covered the hurdles that HEIs encounter in trying to change the behavior of consumers to encourage sustainable practices. One through line we can draw through all of Sterling’s environmental programs and sustainable practices is a focus on giving their students a hands-on role to see firsthand their impacts on the environment. This understanding of the students’ roles as both individuals and members of a larger system allowed them to see the rippling out effects their behavior could have, for positive or negative consequences. Or, as they explained in our interview, they want to show, “Humans' role as members of the environment, not separate from the environment.”

Recommendations

The specific impacts climate change will have on the planet in general–and food systems in particular–is predictable in broad terms. In a more climate challenged and populated world, the amount of land used to grow food as a percentage of available land will shrink in response to the need for increased housing. The ability to continue to artificially fertilize the soil we use to increase yields will diminish. The intricate natural interdependencies required to maintain pollination for many of the foods we eat will continue to collapse.

The question is when, and what steps do we need to take now, what steps do we need to take soon, and how do we balance those steps in a way that meets the financial needs of food service providers, the multimodal needs of higher education institutions, and the broad preferences of students including financial (low cost), ethical (social equity), environmental (sustainable), personal (what do they like to eat), and experiential (changing preferences and practices through exposure to new ways of thinking about food). Sustainability certification and ranking systems in higher education help food service providers, food producers, higher education administration, and students to be more aware of where their food comes from and its impact locally, nationally, and globally.

Some use high-level initiatives like the United Nations Sustainable Development Goals as guidelines for how they approach and report on their own sustainability initiatives and progress. Others use structured third-party systems like AASHE STARS to capture a wide range of metrics including academic, energy, facilities, and many others, with food service operations often having a minor impact on the overall scoring. These systems work well, generally, to capture a wide-ranging number of metrics to provide an aggregated measurement of how a college approaches and actualizes sustainability in their campuses. But when it comes to capturing the totality of how food service providers integrate sustainability into higher education operations, these ranking and certification systems fail to accurately measure the entirety of the impact of their work.

Recommendation #1 - Increase Points Allocated to Food Scoring

As this report has shown, food is a crucial driver in sustainability and one of the few areas where individual agency overlaps with systems change. Food and food production is a part of every SDG, some more directly than others. Food service providers are looking to the future and have shown the desire to make food sustainability a pillar of their ESG goals. For all these reasons it should stand that food should be a more prominent part of AASHE STARS' HEI sustainability assessments than it currently stands at six points for food and beverage purchasing and two points for sustainable dining. This is particularly critical considering that AASHE STARS is the

leading sustainability program in which HEIs participate. While all parts of AASHE STARS are voluntary to complete, adding more points would be a natural incentive for HEIs to complete the food sustainability section. In considering what is an appropriate number of points, we considered how food production represents nearly 36% of our greenhouse gas emissions (Yoksoulian, 2021). In light of this, we would like to see the AASHE STARS food category raised from eight points to a total of 36 points. This would expand the food category from what it is now, making food a bigger driver for change. In truth, we believe that food should be represented by more than 36 points, but this will put food on par with the academics category in AASHE STARS.

Part of these new points can be allocated to updating the Innovation point sections, which currently is an optional field that lets HEIs catalog different innovations at 0.5 points each, for a total of four points. Currently, a HEI is able to only claim these points once per innovation, meaning that if a campus installs a garden that uses climate smart agriculture techniques (as an example), they will only be credited once. With three years between AASHE STARS submissions, we believe that HEIs should be credited for maintaining innovative systems over the years and recognize the effort in maintaining these systems. Additionally, the current metric for Innovation is category-wide, meaning innovation points can come from any category or subcategory, such as academics or transportation. We believe that the scoring should still have these four category-wide points, with an additional two points being awarded specifically in the categories food & beverage purchasing and sustainable dining. This would bring the total available innovation points to six and help to spur HEIs to look critically at ways to drive food-centric innovation on their campuses.

These expanded points would also help to address the multitudinal input problem we noted in our Discussion section on data transparency. If a HEI contracts its campus dining services to one provider and its stadium concessions to another, this would allow room in the scoring metric to assign a score to each type of venue. This would also increase transparency for HEIs, showing their stakeholders how these different venues compare in regard to food sustainability, while also giving the HEI insight into how each vendor is progressing towards their sustainability goals.

Recommendation #2 - Stronger Collaboration between Broad Sustainability and Food-Specific Programs

Our second recommendation ties into the first: to successfully implement this expansion of AASHE STARS focus on food sustainability and the additional points, we recommend a stronger collaboration between AASHE STARS broad sustainability metric and Real Food Challenge’s food-specific programs. AASHE STARS should expand their existing collaboration by allowing Real Food Challenge to inform and oversee the STARS expansion of reporting points for food and dining. Real Food Challenge has spent nearly

fifteen years positioning themselves as a trusted assessor for food sustainability efforts on college campuses. In that time, they have collaborated with a number of other agencies, such as Anchors in Action and Slow Food USA, as well as working with AASHE to streamline the submission process for HEIs that participate in both Real Food Challenge and AASHE STARS. Expanding this partnership between AASHE and Real Food Challenge will add a level of legitimacy to these expanded categories, as Real Food Challenge has identified itself as a category leader in assessing a HEI's sustainability efforts when it comes to the topic of food.

The goal of the first recommendation is to expand the focus and weight that food carries in the AASHE STARS metric; the goal of the second is to make sure this expansion is done in a way that puts that focus and weight on the right factors. Partnering with Real Food Challenge will accomplish this goal, while also bringing legitimacy to the expanded food category by connecting the new points to Real Food Challenge's established metric. Previously in this report's Summary of Finding, we noted AASHE does not always give HEIs much notice before updating their assessment metric. With an expansion in the point system of this size, we believe it is crucial to show the reason why these points are allocated the way they are, that they are weighted for a reason and not just thrown into different subcategories without regard for their real-world impact. Real Food Challenge has an established metric, a growing participation rate among HEIs, and is already involved–albeit to a modest degree–with the AASHE STARS reporting process. Along with Real Food Challenge overseeing the roll-out of AASHE STARS' expanded metric, we believe HEIs still need to be encouraged to utilize food-specific sustainability metrics. To this end, we suggest STARS include a category for HEIs to note their collaborations with organizations like Real Food Challenge, WRI's Cool Foods Pledge, or Anchors in Action. This collaboration category points could be allotted in a similar fashion to innovation points, where HEIs can use this category to highlight the collaborations that are unique to them and their region, as well as the established metrics previously listed. This collaboration category should be presented as an opportunity for HEIs to leverage the expertise of food-centric assessment programs and to lean on the work of other organizations to better their own sustainability programs.

Along with bringing legitimacy, this partnership with Real Food Challenge will also offer transparency to stakeholders. Real Food Challenge is very clear about its goals, processes, and the involvement of students, who are one of the major stakeholders for campus dining initiatives. Adoption of this recommendation will help increase the amount of HEIs directly involved in managing and improving their food sustainability efforts, while also publicly presenting that information in a way that is easily available to review and measure progress. If a HEI feels that food sustainability is not something

they wish to pursue, then–as is true with all of the categories on AASHE STARS–they do not need to complete those sections.

Recommendation #3 - Increasing Affordability in Sustainable Meals

We have heard in our interviews that HEIs have a strong desire to provide ecologically sustainable foods to their students, but often are hesitant to take on policies that may increase food costs for students. As the University representative from ASU explained, there is tension in seeking out sustainably sourced foods, as, “It's a never-ending cost premium, and it is tightly counterbalanced by the desire to provide affordable meal plans to students.” WRI’s Cool Food Pledge takes an interesting look at increasing sustainability awareness by highlighting specific meals that help to lower emissions and build planetary health. To encourage diners to try these meals, campuses could offer certain Cool Food meals at a discounted rate to all students, staff, and faculty. While the ultimate goal of WRI is to have a majority of foods meeting the Cool Food Pledge, logistically it would not make sense to sell every approved dish at a discount. For example, Arizona State University is hoping to launch 350 Cool Food items in the first year of its collaboration with WRI’s pledge (ASU News, 2022).

Economically, the food service providers and HEIs could make up the price difference by raising the price on foods that add to GHG emissions. This is an idea borrowed from the polluter pay principle. For years now, environmental groups such as the Organic Trade Association have looked to push for a “polluter-pay” model, where the agricultural companies that have historically been responsible for the most widespread pollution are given the largest burden to clean up damage inflicted on the ecosystem. For a college student, they may be interested in sustainable food options, but cheap, subsidized meats and corn may win over in their pocketbook. This is another opportunity for HEIs to invest in future sustainability through the action they take in their dining halls today.

Some campus dining services, however, are offered as an all-you-can eat format where diners are charged a flat fee for a single charge or “swipe” on their student dining card. In these cases, this pricing enticement would not be able to be implemented, but dining services could still take advantage of WRI’s Playbook for Guiding Diners Toward Plant-Rich Dishes in Food Service for increasing interest in these dishes, as well as replacing high-emission offerings in their all-you-can eat dining areas with these plant-rich dishes. We would also note the findings on pricing in our Discussion section, which showed HEIs that move towards sustainable food purchasing are able to maintain their pricing model as they build operational efficiencies.

Recommendation #4 - Building Environmental Education

In our interview with Sterling University, we heard a particularly powerful phrase: “Understanding is the precursor to care.” Current AASHE STARS metrics look at

sustainability in academics and also offers two points for an “Immersive Experience,” which is defined as a week or more on-campus, off-campus, or overseas, and focuses on learning about sustainability. We would argue that HEIs should look to build an immersive experience on their existing campuses. For example, in our conversation with Sierra Club, their representative highlighted Colorado State University’s campus garden and how it may only provide a fraction of the produce needed for dining operations. In spite of the garden’s minuscule size, the true value of the garden was in building environmental education among students. Our suggestion for building environmental education follows a similar idea: not all colleges are in the position Sterling is to source from an abundance of local producers, or build a garden that produces a significant amount of food for the campus, but colleges can look to exposing students to smaller models of sustainable production.

This could be done through HEIs instituting a first-year general education requirement focusing on earth science, climate change, and agriculture. To build on the immersive experience, HEIs can take advantage of the US’s expansive agricultural network to bring students to working farms and ranches. With 17.3% of land in the US used for crops and 29% for grassland pasture and range, it should not be impossible for most HEIs to locate an operating agricultural facility in their vicinity (ERS, 2017). Additionally, HEIs could use their existing food service infrastructure in this course to build understanding around food waste, campus dining operations, and sustainable food sourcing. Out of all of this paper's recommendations, we understand the inherent complexity of adding a new, required general education course en masse to HEIs. It has been difficult, however, to come to any other conclusion when so many of our interview subjects highlighted the importance of expanding environmental education to students of all majors. This conclusion is also not a new one, as this recommendation also echoes the call for universal Environmental Education that was made in 1992 by the United Nations in their Agenda 21 publication (United Nations Sustainable Development, 1992). To confront the basic issue of cost in designing this course, we would reiterate our point from the discussion that HEIs that invest in sustainability not only open up access to increased endowments, but also find those endowments are more likely to weather times of financial uncertainty (Kadden, 2009; Minutolo et al., 2021). Additionally, with climate change forecasted to increasingly disrupt the normal perceptions around business operations and daily life (i.e. supply chains, agricultural production, immigration, civil infrastructure), it will become increasingly important to educate citizens on the issues around climate science (Gerrard & Wannier, 2013; Halldórsson & Kovács, 2010; Tan et al., 2021; Zhang et al., 2017). HEIs may find it beneficial to begin to proactively establish a baseline education program for the increasingly important understanding of climate sciences sooner rather than later.

Recommendation #5 - Metrics for Regional Priorities

To branch off the previous recommendation, we would also look to add metrics that bring attention to HEIs making improvements that address regional environmental priorities. As anchor institutions in their communities, HEIs should take the initiative to alleviate and mitigate some of the stress existing systems and infrastructure will face due to climate change. If an influential metric like AASHE STARS or Real Food Challenge lists regional priorities in their assessment instrument, it will signal to all STARS participants that this is an area worthy of consideration and HEI resources. Additionally, adding a subcategory for HEIs to highlight the ways in which they are addressing regional priorities can help to signal to stakeholders and the community at large that these are serious issues that should be addressed. In our interview with a sustainability manager at ASU, they noted that being able to present third party vendors with AASHE STARS' requirements gave their sustainability requests an additional level of validity. They noted that showing a vendor the ranking requirements, the explanation of goals, and the negative externalities associated with unsustainable practices gave their requests the necessary credence for the vendor to offer ASU a sustainable alternative. By encouraging a broad conversation about the need to look at the unique concerns facing local communities, HEIs can look at innovative ways to target specific issues while also improving their ranking and assessment scores. For instance, in the southwest where water is a major concern, HEIs could earn points if their food purchasing is from water wise or climate smart agriculture (rather than producers who still use flood irrigation). In the southeast, which has higher overall food insecurity than the rest of the US, HEIs could look at creating student gardens and orchards to provide fresh, local produce to supplement community food banks (ERS, 2022). Along with supplemental produce, HEIs can use their positive brand and influence to highlight issues of food insecurity and food apartheid in a way that raises awareness of this basic human need, and not patronize or stigmatize the patrons of the food bank.

Recommendation #6 Leverage Policy

Higher education institutions are educating and shaping future leaders to act on sustainable development. Although ranking and certification programs may incentivize HEIs to have policies to support sustainable development, HEIs could uphold their values and internally adopt policies to stand at the forefront of modeling the sustainable development. Institutionally, there are policy revisions that HEIs may make to foster experiences for students that normalize practices while addressing and prioritizing sustainable development. Adoptions and revisions in policies commit HEIs to achieving sustainable development goals.

To address sustainable food procurement, HEIs can mandate policy to procure a certain percentage of sustainable foods annually at an incremental rate, moving the needle on

increasing local and sustainable foods served in their dining services each year. HEIs may leverage their purchasing power by forming purchasing cooperatives with other HEIs, creating bid language that supports their commitment to sustainable development and requiring prospective vendors to meet those commitments.

While a large number of private universities exist outside the land-grant university system, another recommendation to push for sustainable practices is for states to create policy that mandates collaboration with regional food production systems. As these HEIs receive annual federal funding–which is required to be matched by the state–for agricultural research and cooperative extension work, this is an opportunity to tie their funding to a commitment to support local food systems, such as purchasing 10% or more of their food from regional growers/processors.

Recommendation #7 - Pursue Innovative Tools

Limited capacity, inefficient data collection, and misaligned management practices are barriers for HEIs to efficiently and effectively participate in these assessment programs. Innovative solutions, such as automated data integrations systems, could help to make the data tracking and reporting required for these programs more mainstream and standard practices, therefore helping to normalize data transparency within our food system. This would also allow for increased ease of use when it comes to accessing comparative food systems data for HEIs and food service providers when it comes to making operational decisions for food and dining. One example of this would be for programs like AASHE STARS or Real Food Challenge to work with food service management companies and their suppliers to identify “STARS Approved” or “Real Food” tags or filtering categories in their online ordering systems to make it easier for buyers at HEIs to quickly identify qualifying foods. Throughout this report, the interviews, and literature review we have heard calls for a standardized assessment metric; to this we would also add in a proposal for standardizing sustainability categories in ordering. While a food service broadline distributor like Sysco or US Foods may have different pricing for different accounts, there is no reason why they cannot share sustainability information to all of their accounts in an attempt to bring more food service programs into compliance, if they desire to participate.

Throughout our interviews we also heard repeatedly from HEIs and their food service providers about issues around sourcing problems, such as the sustainability representative at ASU looking for fair trade sugar packets. Development of a survey instrument for HEIs to submit food items that would help them attain their sustainability goals (and thus a higher ranking or score on the assessment) is another innovation that may help lower the barriers for HEIs looking to change their food program but are running into gaps with their current food provider.

These are just two examples of potential areas for innovation, but certainly there are countless others. Part of our goal for highlighting the need for increased innovation for reporting tools is to recognize that by expanding the points in food and dining, there will be a call from HEIs looking for increased ease-of-use when it comes to reporting.

Conclusion

Building and maintaining sustainable food systems is no small task and it will take a concerted effort from multiple proponents to achieve real change in our world. It requires commitment and collaboration from many stakeholders, including assessment programs, HEIs, food service management companies, and other players in our complex food system. These ranking and certification programs have both an opportunity and a platform to provide support for HEIs and to serve as a convener for collaboration among these varied stakeholders, as well as with other assessment companies. We can't put all the responsibility on these programs, however, as we need HEIs to prioritize food as part of their overall educational experience for their students– both by elevating food and agriculture in their curriculum and prioritizing sustainable food in their budget and contracts. Simply participating in these assessment programs isn't going to bring about transformational change by itself; it also depends on how HEIs use the data and findings to steer their food service programs and set measurable goals.

We designed the recommendations of this report in this spirit of collaboration and drawing upon multiple stakeholders to support a sustainable food system. In starting this research, we noticed the calls for a standardized metric and wondered if there was the possibility for a single, unified assessment process. Upon completion of our research and interviews, we have come to see the value in the different ranking and certification programs, as well as appreciating the unique scenarios facing HEIs in different regions and serving different populations. To this end, it only made sense to build off the strengths of these different programs and their metrics, and to look to opportunities where they could work together: AASHE STARS with their reach and expansive membership, Real Food Challenge for their deep focus on sustainable food choices and student-involvement, and Cool Food Pledge, for their unique design allowing for greater individual engagement when selecting meals. Ultimately, these different programs, when used in conjunction with one another, allows for a holistic look at a HEI's food service program and its purchasing impacts. And this is not to overlook the value provided by the other metrics covered earlier in this report, but to explain why these three were highlighted in our recommendation section.

Following the notion that businesses manage what they measure, we believe that by providing HEIs with a robust assessment program they will be able to make real changes to their food programs. The real challenge is not to create a new metric, but to expand the existing metrics to bring more light–and more data–on the impacts of food systems in higher education settings.

Appendix: How Food is Weighted Against Categories within Different HEI Sustainability Programs

Table A1: What Do Different Metrics Measure?

	AASHE STARS	Sierra Club Cool Schools[3]	Real Food Challenge	Good Food Purchasing Program	WRI Cool Food Pledge	THE Impact Rankings
Food Origin		3%, or 30 points[4].	Qualitative[5]	20%[6] + 5 extra points		1.25% overall, 4.8% in SDG 2: Zero Hunger[7]
Locality/Distance	X (SFSC[8])	X	X	X		
Farm Size	X		X	X		
Environmental Practices & Stewardship			Qualitative	20% + 3 extra points		
Environmental Practices & Resource Conservation (*e.g. USDA Organic, Rainforest Alliance Certified, etc)*		X (see above)	X	X		
Sustainable Seafood	X		X	X		1.26% in overall score[9]
Grazing Practices			X	X		1.2% in overall

[3] 2017 model prior to using AASHE STARS Sierra club ranked using a 1000 point total.

[4] Institutions earn 1/3 of available points by calculating the percentage of food expenditures that either are grown and processed within 250 miles of the institution or are third-party-certified responsible (certified organic, fair trade, etc). Institutions earn up to 2/3 of available points as a proportion of the highest percentage reported.

[5] Green, yellow, red stoplight rating. See Figure 10.

[6] 20% represents a maximum of three standard points.

[7] Local & sustainable food purchases.

[8] SFSC stands for *Short Food Supply Chain*, as AASHE STARS no longer scores points for local purchasing.

[9] Policy to ensure food on campus from aquatic ecosystems is sustainable.

						score[10]
Plant-based & Vegan	X	0.70%	X	X		
Organics & Recycling Collection	X	0.70% for organic garden[11]		X		
Food Waste Tracking & Interventions		0.7% and 0.7% [12]		X		2% in overall score - measure amount of food waste from food served within HEI
Water Usage		4%		X		
Greenhouse Gas Emissions Reduction related to food.					100% determined by weight of food purchased by type.[13]	
Policy on ethical sourcing						1.25% in overall score
Animals			Qualitative	20% +4 extra points		
Animal Welfare	X		X	X		
Responsible Antibiotic Use			X	X		
Farmers & Food Workers			Qualitative	20% + 6 extra points		
Unionized Labor			X	X		

[10] Policy to ensure food on campus is sustainably farmed

[11] Organic food is rolled into Environmental Practices. Recycling is only scored for electronics and for how much recycled office paper is purchased.

[12] 0.7% for pre-consumer food waste composting, plus an additional 0.7% for post-consumer food waste composting.

[13] GHG emissions from supply chain, food-related land use in hectares, food-related carbon opportunity costs, and normalization of metrics through the Cool Food Calculator.

Fair & Safe Conditions (eg. Fair Trade Certified, Fair for Life Certified, compliance with labor laws)	X	X - See Environmental Practices	X	X		
Priority for equity & justice			X	X		
Nutrition				20% + up to 6 extra points		
Procurement of Healthy Food				X		
Healthy Food Service Environment				X		
Health Equity				X		3.75%
Healthy Food Preparation				X		
Sustainable Food Choices						1.25% in overall score
Marketing & Education		0.70%		X		
Education, Research & Innovation	X	10.70%				
Graduates in Ag or Aquaculture & Sustainability						4.98% in overall score
Innovative partnerships between institutions and producers (training, supply chain collaborations, etc.)				X		3.75% in overall score
Research and Publications						7.02% in overall score

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About the Authors

Nick Benard

Nick's passion has always been to better understand food and the culture and history behind it, which has been a continuous work of education and discovery. After graduating from Penn State, he worked in purchasing for a specialty food and cheese importer for almost nine years. While there, he became fascinated with traditional foodways, which brought him to stage at butcher shops in Pennsylvania and Wisconsin and learn on-farm slaughter and seam butchery from Christoph Wiesner, President of the Austrian Mangalitza Pig Breeders Union. In 2014, he began to work in professional kitchens, specializing in butchery, charcuterie, and inventory management. Over the years he built several long-standing relationships with local farmers and ranchers, which led to Nick delivering on-farm workshops on topics including raw-milk cheesemaking and whole hog butchery. He lives in Glendale, Arizona, with his wife, daughter, and two dogs. In his free time he likes to tend to their small backyard food forest.

Stephanie Lip

After graduating from Johnson & Wales University with a degree in Culinary Arts & Nutrition, Stephanie moved from NY to AZ to serve as an inaugural service member with FoodCorps in 2011. Her year of service included hands-on gardening and cooking classes with students and working with school food services to procure and serve local foods, which opened her eyes to the realities of the nation’s flawed food system, particularly within the industry around foods in K-12 schools. Having primarily worked in restaurants and back-of-the-house jobs, Stephanie redirected her experiences to improving service to students in schools. Since then, Stephanie has worked with several school districts in the East and West Coasts, serving in various roles including Supervisor with Monterey Peninsula Unified School District, School Chef with Brigaid and New London Public Schools, and currently as Nutrition Director with Pacific Grove Unified School District, where she oversees the preparation, execution, and service of USDA-compliant meals. In her spare time, you’d likely find Stephanie with food – she enjoys growing, cooking, eating, reading about, and watching anything food related.

Eleanor Ross

While proudly from St. Louis, Eleanor has been in Montana since 2013. After graduating from Xavier University, she spent 2 years as an academic support through Jesuit Volunteer Corps Northwest at Pretty Eagle in St. Xavier, Montana. She stayed in Big Horn County, serving 2015-2017 in the Hardin School District with FoodCorps, an AmeriCorps program connecting kids to healthy food in school. Eleanor has continued with the school district, now serving as the Farm to School Director. She coordinates the

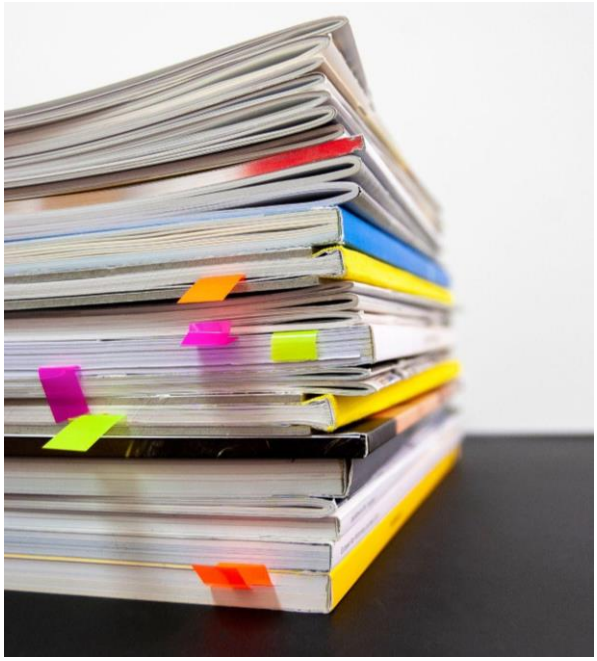
food, gardening, and nutrition education throughout the district while working with farmers to increase local foods in the school lunch program. Additionally, Eleanor is the Executive Director of Helping Hands Food Bank, a nonprofit organization serving to eradicate hunger in Big Horn County by improving food access, quality, education and sovereignty for all.

Michael Ryan

Michael is a Vice President with Automated Data Processing (ADP) where he serves as Executive Sponsor for their Green Business Resource Group, working globally and nationally on sustainability initiatives including ADP's recently announced pledge to achieve net zero greenhouse gas emissions by 2050. Over the span of his professional career Michael worked in the construction and technology industries, and at a Seattle-area college where he managed several professional/technical programs including Landscape & Horticulture, Culinary & Pastry, Wine Technology, and others. During this time he worked to integrate sustainability into the core curriculum and campus food service practices, as well as partnering with local and regional farms, food producers and vendors, integrating them into campus culinary programs and food service operations. In additional to creating coursework and degree programs in Permaculture, Sustainability, and Entrepreneurship, he also developed innovative pilot programs with local government and non-profit agencies to create Tool Lending Libraries, Community Orchards, Green Building classes, a Zero Waste/Integrated Compost pilot program, and an Aquaculture Lab. A native of New Hampshire, Michael grew up in a small town working on farms, managing livestock, planting and harvesting crops, maintaining farm equipment, and occasionally making his own (not very good) maple syrup.

Kate Seybold

Kate works for the Minnesota Department of Agriculture as the Regional Marketing Specialist, supporting local and regional market development for Minnesota grown and raised foods. She coordinates statewide Farm to School training, technical support, and programming – including Minnesota's Harvest of the Month program. Kate also works closely with partners across the state to expand wholesale markets for small and emerging farmers, strengthen local and regional food systems, and support food and agriculture marketing efforts. Prior to her work at Minnesota Department of Agriculture, Kate spent six years leading Minneapolis Public Schools' Farm to School program, overseeing the district's local food procurement and education. Kate graduated from St. Olaf College with a degree in biology and environmental studies. She currently serves on the Board of Directors for Seward Community Co-op and also served several years on the Minneapolis Food Policy Council. Originally from central Wisconsin, Kate now calls Northfield, MN home.



Contact for more information:

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