FARM TO COLLEGE & STUDENT FOOD ACCESS:

AN EXPLORATORY, JUSTICE-BASED INVESTIGATION

AMONG NEW ENGLAND INSTITUTIONS OF HIGHER EDUCATION

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EXECUTIVE SUMMARY

One of the local food movement's many offshoots, Farm to College (FTC) primarily concerns the procurement and use of regional food by institutions of higher education. As regional food procurement becomes increasingly popular, it is necessary to assess its full range of impacts on the campus food system. College students arguably constitute the largest stakeholder group within campus food systems and may experience relatively high rates of food insecurity. Factors with potential to influence student food access, such as regional food procurement, are therefore ripe for critical analysis.

Our exploratory research begins the work of digging into regional food procurement as it relates to student food access on college campuses. We focus on this topic in the context of New England due to the unique data and network access provided by a collaboration between a regional nonprofit, Farm to Institution New England, and a student research team at Tufts University. A systematic literature review, stakeholder interviews, and qualitative analysis are synthesized into a series of recommendations and indicators to motivate future research. A food justice approach is used to illuminate campus food system inequities attributable to race and wealth hierarchies.

This investigation does find regional food procurement to interact with student food access. A variety of mechanisms mediating this interaction emerged. To differing degrees, these include the nutrition of campus food, student patronage of campus food establishments, campus food waste, meal plan participation, food affordability, differential access, cultural relevance, and student activities. We focus on regional food procurement's current impacts on student food access while also imagining possible future associations. Additionally, as this research was conducted during the height of the Spring 2020 coronavirus pandemic, emerging shifts in regional food procurement and food access related to college campuses inform our narrative.

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GLOSSARY

For clarity and consistency, key terms are defined in specific ways for the purposes of this research.

Key Term	Definition
Campus Agriculture Projects	Campus Agriculture Projects include initiatives under which food is grown, raised, or harvested at any scale on a college campus.
College	In this report, we use "college" to refer to all institutions of higher education, focusing primarily on colleges with dining services.
Community Supported Agriculture (CSA)	A CSA is a farming operation that pools financial risk at the beginning of the growing season through consumer subscriptions. Subscribers then receive boxes of seasonal farm items throughout the growing season (*Community Supported Agriculture*, 2019).
Cultural Relevance	We define cultural relevance in food as dishes and ingredients traditionally important to cultures outside of the New England region. Cultural relevance is a component of food's personal acceptability.
Farm to College (FTC)	FTC typically describes the procurement and use of regional food, including food grown on-campus, by institutions of higher education. Educational activities and curriculum may also be components of FTC programs.
Farm to Institution New England (FINE)	A key collaborator on the research shared in this report, FINE is a network of nonprofit, public, and private entities working to transform the food system by increasing the amount of good, regional food served in schools, hospitals, colleges, and other institutions in the New England region of the US (*About Us*, n.d.).
Food Justice	Food justice critically analyzes systemic disparities attributable to race and wealth in the food system to expose and eradicate inequitable access to healthy food (Alkon & Agyeman, 2011).
Local Food	Though no standard definition of the term exists, "local food" typically describes food grown within a self-determined, geographically proximate boundary.[4] We use the term "regional food" instead of "local food" throughout this report when referring to our research.

[4] Local food can also be defined subjectively. Individuals, particularly individuals who have emigrated, may hold multiple perceptions of local food in relation to their immediate and past geographies. These individuals exhibit trans-localism in which they simultaneously identify local food as belonging to previous and proximate food systems

Regional Food	Throughout this report, we focus on "regional food" rather than "local food." We define regional food as food grown, raised, or harvested within the six New England states (Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine) +50 miles, and where processed and manufactured foods have at least 50% regionally grown, raised, or harvested ingredients. That being said, many of the stakeholders interviewed for this research do refer to "local food," which may be defined in a variety of ways.
Student Food Access	We define student food access as the availability and affordability of nutritious and personally acceptable food on college campuses.
Student Food Sovereignty	The right of students to participate and exert decision-making power in the food systems to which they belong (Alkon & Agyeman, 2011).
Supplemental Nutrition Assistance Program (SNAP)	Formerly known as food stamps, SNAP is a federal program providing individuals and families making less than a threshold income with additional money to purchase food (Cronquist, 2019).

INTRODUCTION

The local food movement has been a growing phenomenon over the past two decades. The United States Department of Agriculture began collecting national data on local food in the 2012 Census of Agriculture, and the agricultural economy has seen direct sales of local food increase by nearly $4 Billion between the years 2008 and 2015 (*Direct Farm Sales of Food*, 2016; Low & Vogel, 2011). Tracking the appearance of "local food" in the popular vocabulary, the online usage of this phrase increased by nearly 550% between the years 2004 and 2020 (*Google Trends*, 2020). The coronavirus pandemic and the disruption it has caused within conventional food supply chains has highlighted the importance of local food systems and brought a new level of public awareness to their resiliency and challenges (Rector, 2020; *Special Report: COVID-19 Is Taking a Bite out of Food Supply Chains*, 2020). Local food's elevated status can also be seen in the proliferation of Farm to Table movements.

Farm to College (FTC) is one of these movements. FTC describes the institutional procurement and use of local food, including food grown on-campus, by institutions of higher education. Institutions of higher education, or colleges as they are referred to throughout this report, are particularly important agents in the food system due to their high purchasing power and consequent market influence, as well as their greater level of menu flexibility, decision-making

(Valiente-Neighbours, 2012). This plurality of local food is discussed as "trans-regionalism" in the Discussion section of this report.

autonomy, and constituent interest as compared to other institutional entities(Leighton et al., 2018; Richman et al., 2017). Though no national survey tracks FTC programs, recent data collected by the non-profit Farm to Institution New England (FINE) sheds light on the extent of farm to institution activity in one US region. FINE's campus dining survey reported the following for responding colleges[5] across New England (Leighton et al., 2018):

- ⇒ Respondents served 83.2 million total meals and spent $398 million on food in 2017-18.
- ⇒ 93% of respondents reported purchasing local food for their campus food service.
- ⇒ FINE estimates that New England colleges spent between $100 and $115 million on local food during the 2017-18 academic year.
- ⇒ 78% of respondents planned to increase local food purchasing in the future.

With a timeline similar to that of the local food and FTC movements, research on food insecurity among college students in the US has also been growing since the 2000s. A mounting body of evidence reveals food insecurity as a critical issue for as many as one in two US college students, a rate much higher than that experienced by typical US households (Nazmi et al., 2019). As such, US colleges should increase their awareness of and engagement with upstream changes to mitigate low levels of student food access.

Due to FTC's growing popularity, its potential to greatly impact food systems on campus and beyond, and the high levels of student food insecurity mentioned previously, it is necessary to examine the heretofore unknown impacts of local or regional food procurement at colleges.[6] A change in student food access – the availability and affordability of nutritious and personally acceptable food on college campuses – may be one such impact.

This report shares the results of an exploratory investigation into regional food procurement as related to student food access on college campuses. The research focuses on this topic in the context of New England due to the unique access to data and stakeholder networks provided by FINE. A food justice approach is used to illuminate food system inequities attributable to race and wealth (Alkon & Agyeman, 2011).

METHODS

This research was initiated through a collaboration between FINE and Tufts University. The research includes a literature review, qualitative data collection, and analysis.

The literature review took place in February 2020. The author systematically combed through two thematically appropriate databases, ProQuest and Scopus, to assess the academic literature.

[5] The 2018 campus dining survey had a 55% response rate. Colleges that responded represent 70% of undergraduate enrollment in New England.

[6] Throughout the rest of this report, we will refer to "local or regional food" as "regional food," as this more concise phrase reflects our specific research topic of interest.

The populations of interest were colleges or college students in the US or Canada. The exposure of interest was regional food procurement. The outcome of interest was student food access. Excluded were articles not available online and articles written in non-English languages. References cited by key works, as well as other sources referencing key works, were searched for relevance. Specific search phrases used in conjunction were:

- ⇒ *(college* or "higher education" or "post secondary" or campus* or undergrad* or graduate*) NEAR/2 (student* or cafeteria* or dining or canteen* or "food service*" or foodservice*)*
- ⇒ *(farm NEAR/2 (school or college)) OR (regional or local NEAR/2 (procur* or purchas*) AND food) OR ("values-based" or "real food" or "good food") OR (garden* or farm*)*
- ⇒ *(food* NEAR/2 (secur* or insecur* or justice or access*))*

The literature review also included a selective search of the grey literature including dissertations, higher education news sources, and policy and white paper reports available online. Most of the grey literature reviewed was recommended by FINE or identified through the systematic literature review.

Qualitative data was collected through 45-minute semi structured interviews via video chat (see Appendix for interview instrument). In response to the coronavirus pandemic's escalating case numbers, quarantine policies, and consequent campus shutdowns in March 2020, a new interview question was developed to explore emerging impacts of coronavirus on regional food procurement and student food access. Tufts IRB approval and consent from each participant was obtained. Potential interviewees from a wide range of sectors were recruited initially through recommendations from FINE, and recruitment continued to snowball as contacts suggested additional key stakeholders. Analysis was conducted via thematic coding.

LITERATURE REVIEW

The literature review on student food access and regional food procurement practices on college campuses yielded no direct hits. It seems this specific nexus has yet to be centered in the academic or grey literature. Though this precise relationship was not their primary subject, multiple sources touched on key aspects of student food access and regional food procurement. These sources came from multiple fields including education, sustainable campus food systems, regional food movements, nutrition, community food security, and higher education news**.** Sources focused on various urban and rural settings in the US and Canada. Key intersections included student leadership, nutrition, affordability, and campus agriculture projects.

Emerging evidence finds regional food procurement to be driven by student leadership and demand on college campuses. A dissertation on food systems and sustainability education at liberal arts colleges concluded that food service procurement reorientations were generally

student motivated (Gardner, 2012). One higher education news article found that across 168 FTC programs listed on the now-defunct website FarmtoCollege.org, students played vital roles in program establishment two or three times more frequently than faculty or staff, respectively (Gustafson, 2012).

The nutrition of regional food is of interest because, based on our working definition of student food access, increased nutrition of food available on campus would increase student food access. If regional food was found to be more nutritious than its non-regional equivalent, then regional food procurement would automatically serve to increase student food access. The literature on this point does not signify a direct relationship between a food's regional origin and its nutritional qualities. However, some evidence points to regional food procurement improving nutrition in unique settings in other ways. There is evidence of improved nutrition due to increased produce consumption and dietary diversity related to Farm to School activities in grades K-12, which often combine regional food procurement with school gardens and farm visits (*The Benefits of Farm to School*, 2017). There is also evidence of household local food purchases being associated with higher consumption of certain vegetables, legumes, and overall increased diet nutrition (Thomas & McIntosh, 2015). Though neither of these examples mirror FTC settings directly, they suggest regional food procurement may serve to improve nutrition in some cases.

Multiple sources of grey literature and one peer-reviewed paper spoke to the issue of regional food affordability for college students on campus. Various examples of regional food opt-in choices in exchange for higher costs were seen in a higher education news article and a community food security dissertation from Concordia University in Canada (Bennell, 2008; Gustafson, 2012). In a study focused on sustainable campus food systems, Barlett (2011) emphasized that approximately 30% of the 146 colleges represented in one survey passed along price premiums to students for food that was local, organic, or sustainable. Though it does not appear to be the norm for a majority of colleges, increased student costs for regional food do exist.

Campus agriculture projects and the food they provide for food services were final aspects of interest identified in the literature. Campus agriculture projects were investigated independently (LaCharite, 2016; Osei, 2019) and as one of multiple campus food or sustainability initiatives (Barlett, 2011; Regan, 2015).

Some findings do not suggest strong connections between campus agriculture projects and student food access. Analyzing motivations for campus agriculture projects at 148 U.S. colleges, LaCharite (2016) found that increasing student food access was included but not highly prioritized as an objective by project leaders. The study additionally found that providing regional food for campus food service was an even lower priority, ranking third from last out of 30 possible objectives.

Diverging from the findings of LaCharite (2016), other sources did trace associations between campus agriculture projects and student food access. A higher education news article showed how one college's campus farm was used to provide regional food for a campus food pantry and empower food insecure students (Osei, 2019). On another campus, Regan (2015) found that

campus agriculture projects provided students with access to affordable regional food, empowered food growing experiences, and strengthened community networks. Finally, Barlett (2011) reflected on the ability of sustainable campus food projects to build student coalitions and swell the ranks of food security advocates by weaving together student groups concerned with good food, regional food, and social justice. These various examples demonstrate how campus agriculture projects may directly and indirectly impact student food access.

Though literature focused directly on the relationship between regional food procurement and student food access was not identified and may not yet exist, relevant findings did emerge from the literature review. The student leadership driving FTC movements, the possible correlations between regional food and nutrition, the affordability of regional food for college students, and the importance of campus agriculture projects are of particular interest. These regional food procurement topics and others related to student food access make up the central prompts of our stakeholder interviews.

Interview Results

Twelve interviews were conducted with a total of 14 stakeholders between April and May 2020. Two interviews included two stakeholders simultaneously due to the primary stakeholder enlisting a colleague to provide additional insight. Stakeholders represented a broad range of roles (Table 1) and were located across the six New England states. Additionally, one stakeholder had been involved with FTC on their campus as an undergraduate student.

Table 1. Roles Held by Interviewed FTC Stakeholders*

Current Role	Stakeholders (#)
Food Service Director	
Self Operated	2
Food Service Management Company	4
Academic	
PhD Candidate	1
Professor	3
Program Director	1
Food Insecurity Working Group	1
Registered Dietician	1
Federal Nutrition Program Coordinator	1
Director of Food System Non-Profit	1
Independent Consultant	2
Farmer Training Program	1

* A total of 14 stakeholders are represented in this table. Some stakeholders held multiple roles.

Though the interview results provide a range of perspectives from a diverse group of stakeholders, they should not be interpreted as representative of all regional food procurement programs in New England colleges.

Coronavirus Impacts

Interviews commenced by asking stakeholders to reflect on the greatest food access impacts the coronavirus crisis has had on their campus or in their community.

Overwhelming, we heard that coronavirus has worsened students' ability to access food, particularly for low-income students. A major factor mediating this outcome was the widespread loss of student employment opportunities as on-campus and service sector jobs became unavailable. The additional barriers college students face in accessing SNAP benefits was suggested by one stakeholder to worsen the risk of student food insecurity due to job loss.[7] These challenges emphasize food justice inequities in which students typically relying on employment to afford food are inequitably burdened by coronavirus-induced changes.

In terms of coronavirus's impacts on college-enabled community food access, interviewees reported that supply chains connecting institutions to communities had also been altered. One college has no longer been able to donate food to their local food bank, while other colleges have temporarily begun to donate excess food resulting from lagging responses in their own food supply chains.

Colleges have initiated several programs aimed at equitably increasing food access in response to coronavirus. While college campuses were closed, students who had no choice but to remain on campus were being fed by their college regardless of meal plan status. This was true across all colleges represented in the interviews. Some colleges were also facilitating grocery access for students. In particular, these resources were geared towards serving food insecure international students and off-campus students living in the nearby vicinity. In response to community needs, and in an effort to keep supply chains running, one campus food service began preparing meals for individuals experiencing homelessness.

In addition to asking about food access impacts, we also asked stakeholders about coronavirus's impacts on regional food procurement. Responses indicated that campus food supply chains have experienced huge disruptions due to sudden drops in food demand as

[7] Though requirements are state-specific and a number of exceptions exist, able-bodied students in higher education generally must be enrolled less than half-time in their academic program to meet SNAP eligibility requirements (*Students | SNAP*, 2013).

students, faculty, and staff moved off campus.[8] Current and budding regional food initiatives on campuses have also been paused, suggesting longer-term impacts for regional food demand on campuses. These derailed initiatives included campus farms, which will have direct impacts on the campus-produced food supply for the 2020-2021 academic year.

Despite the general pause of previously planned regional food procurement and programs, new regional food actions have emerged. One campus mentioned that while overall food procurement has fallen, the ratio of regional food procured has remained the same. Another campus has specifically been attempting to procure all of its current, albeit greatly decreased, food supply needs from regional food partners. Additionally, motivation to support regional farmers have been stoked at some colleges. Two campus food service stakeholders expressed a new-found desire to increase regional food procurement in the future to aid in the recovery of regional food systems and improve future supply chain resilience. A handful of campuses also demonstrated strong efforts to maintain and build new supply chain relationships during this time, frequently checking in with regional food partners and helping to facilitate market shifts for regional food. In addition to redirecting regional foods from institutional and restaurant markets to retail markets, we heard that regional food producers are increasingly registering to be SNAP payment eligible. While this does not specifically affect students, it does represent an important increase in regional food accessibility for low-income populations in general.

NUTRITION

While nutrition is a commonly attributed benefit of regional food consumption, substantiation of this claim in the interviews was sparse. Only two stakeholders (from the same campus) were able to provide evidence that regional food procurement improved the nutrition of food served on campus. This campus' food service had a strong focus on regional procurement of beans and grains. They specifically mentioned substituting regional dry beans for non- regional processed beans and regional whole wheat for non-regional refined wheat in cookies. As the first case may lower sodium intake and the second case increases whole grain offerings, these changes brought about by regional food procurement may certainly have a positive nutritional impact.

While other stakeholders were not able to share empirical evidence on the association between nutrition and regional food, speculative associations were common. Many mentioned perceived nutritional benefits from the improved freshness and visual appeal of regional food, as well as the general fruit and vegetable-centric nature of regional food procurement. A few stakeholders made no comment on the connection between regional food procurement and nutrition due to lack of knowledge. Nearly half of the stakeholders mentioned that nutrition was

[8] Food supply chains at large are also experiencing disruptions due to labor loss in production, processing, and distribution caused by the coronavirus crisis.

a separate focus from and not affected by a product's regionality. One academic stakeholder with expertise in regional food shared that the literature on this topic has yet to see real evidence connecting regional food to nutrition.

Patronage

The term patronage is used to describe where students choose to get food on campus. Possible choices range among a variety of options including residential dining, retail stores, catering, and franchise operations. When investigating possible relationships between regional food procurement and patronage, only two responses indicated a possible positive association. One stakeholder explained how their campus's most popular retail eatery strongly emphasized regional food offerings, regional food thereby being a possible contributing factor to students' high level of patronage. Another interviewee provided anecdotal evidence of regional grocery items in campus food retail experiencing greater turnover than conventional grocery items.

Apart from the examples above, other stakeholders did not believe patronage was related to the presence of regional food. Stakeholders frequently expressed that students generally had meal plans and thus chose to get food from campus dining halls. Another stakeholder questioned whether students were even aware of the origin of food offerings on campus. Interestingly, three stakeholders stated that while regional food procurement did not affect patronage on campus, regional food marketing may have contributed to students' college selection.

Food Waste

There are a variety of points along the food chain where food is wasted, including production, processing, distribution, and other "upstream" sources. While upstream waste may drive up food costs for colleges and thus indirectly impact student food access, this research focuses on waste once food arrives on campus, referred to as "downstream" waste. Downstream waste mainly takes the form of 1) pre-consumer processing waste within food service, and 2) post-consumer plate waste from served meals. Food plate waste may signify student acceptability of food served on campus and thus serve as an indicator of student food access. Food processing waste may also affect student food access by directly impacting costs for food service operations.

We asked stakeholders to share evidence of how regional food procurement may be related to the amount of food waste on campus. Only two stakeholders shared relevant responses to this prompt. While the first stakeholder pointed to a potential increase in food processing waste due to regional produce generally being inconsistent in size, they believed this impact was not substantial. The second stakeholder did not believe food waste was associated with regional food procurement in any way. Other responses mentioned how regional food procurement might

impact food packaging and plate-ware waste, but these responses were not relevant to student food access.

Meal Plan Participation

Most stakeholders did not have knowledge of how regional food procurement has affected student participation in meal plans. Of those who did comment, no stakeholder mentioned a negative association in which increased regional food procurement would be related to decreased meal plan participation. One stakeholder did not believe regional food procurement had any relationship to meal plan participation. On the other hand, two stakeholders were anecdotally able to track simultaneous increases in their campus's regional food procurement and meal plan participation rates in the recent past.

Affordability

Investigating the cost of regional food and its impacts on student food access, we prompted stakeholders to share insights on financial costs for both students and campus food services.

Speaking about affordability for students, most stakeholders explained how costs were managed within overall food budgets and therefore not passed along to students. However, multiple exceptions to this trend did appear. One commonly referenced example was regional food in retail and à la carte food environments occasionally being more expensive for student purchase. This was true for multiple campuses, which validates one stakeholder's belief that cost differences were apparent for students without meal plans yet negligible for students with meal plans. On the other hand, one stakeholder shared the belief that their campus's overall meal plan costs were higher due to a strong regional food procurement focus. A final outlying example spoke to how regional food procurement could increase food affordability for students. In this case, a student-run regional food cooperative being supplied with regional food at a subsidized rate from campus food service provided cheap regional meals such as $5 beans and rice bowls for students.

All stakeholders who responded to the prompt on the cost of regional food for campus food services mentioned price premiums. Stakeholders explained that regional food was usually more expensive, depending on seasonality and product type. Regional meat was particularly singled out by most stakeholders as being expensive. In response to the increased cost of regional food, one stakeholder explained how their college had increased its overall food budget. However, as mentioned in the above paragraph, most colleges managed affordability within fixed budgets using cost containment strategies such as limiting portion size, decreasing dish frequency, and taking advantage of lower-cost food streams. Specific and innovative examples of cost containment strategies in regional meat procurement were referenced, which included sourcing

burger meat from diverted streams of dairy cows and bulk ordering of regional meat with other nearby colleges.

Differential Access

One of the interview prompts asked stakeholders specifically about food justice: *How does access to regionally procured food change for students of different race or income level?* Responses were evenly split between those that did and those that did not position food justice as an issue relevant to regional food on campus. While responses discussed differential student access to regional food on the basis of wealth, race was absent from the discussion.

Among stakeholders who indicated that food justice was not an issue on their campus related to regional food procurement, most relied on reasoning tied to meal plans. Stakeholders explained that most students had meal plans and therefore had equal access to all food served in dining halls. Meal plan options were not differentiated by the amount of regional food they included for any of the interviewed colleges, which precludes differential access due to the type of meal plan selected. Stakeholders also mentioned that recent increases in regional food procurement had not been associated with meal plan cost increases. Additionally, one interviewee whose answers were based on data from a recent survey explained that while food access did differ for students of different race and wealth on campus, they did not believe this difference was related to regional food procurement. These responses support the finding that, among the colleges represented in this research, students of different race or income level did not have differential access to regional food on campus.

However, some responses did indicate differential access to regional food on the basis of wealth. Cost premiums passed along to students was the main mechanism through which stakeholders indicated that food justice was indeed an issue relevant to regional food on college campuses. Stakeholders explained how these cost premiums fell on students without meal plans. Retail and à la carte offerings of regional food were occasionally more expensive and thus less accessible to students with less wealth. As already mentioned, one stakeholder believed that their campus's meal plan options were more expensive than typical due to a strong regional food procurement focus.

Apart from student-level cost premiums, food justice issues were also apparent at the institutional level. One stakeholder who was a state-wide food service coordinator explained how one college serving students from a lower-income region only offered a regional burger that was 1.9 ounces smaller than the typical burger offered at other colleges across the state due to budget limitations. This example shows how a college with less wealth may expose students to differential regional food access en masse.

While the above responses revolved around actual differences in access to regional food, perceived differences are also important to consider. In response to this prompt, two stakeholders shared that there was a widespread assumption of regional food being more expensive and only accessible to people of privilege, and they saw this assumption at play for

students on college campuses. The perception of regional food as belonging to a certain set of people is an access barrier, as it may prevent explorations of regional food possibilities.

Stakeholders shared three examples of efforts to reduce food justice inequities related to regional food on campus. At one college, a student food insecurity working group partnered with a student center for people of color and an administrative department for first generation and low-income students to create and implement food access initiatives. One of their programs was a free Community Supported Agriculture (CSA) subscription for SNAP eligible students. The second example, mentioned earlier, was a student-run regional food cooperative that offered low-cost meals. Campus agriculture projects was the third example. Multiple stakeholders shared how when campus agriculture projects enabled students to grow food for themselves and others, the perception of regional food access resulting from these projects transitioned from one of privilege to one of self-efficacy. These programs serve to remove actual and perceived wealth barriers, equitably improving student access to regional food on college campuses.

Cultural Relevance

The cultural relevance of food is an important determinant of personal food acceptability. Cultural relevance thus impacts student food access.[9] Culturally relevant food was defined during the interview process as dishes and ingredients traditionally important to cultures outside of New England.

Seven stakeholders shared experiences about procuring culturally relevant food through regional channels. The regional sourcing of Halal meats to provide for culturally relevant Islamic meals on campus was mentioned twice. Other responses almost exclusively revolved around food grown on campus. One college with extensive on-campus agriculture cultivates crops relevant to Mexican and Korean cultures through a chef-farmer collaboration to meet dining hall demand. Another college was planning to develop a partnership program with a farmer training program for immigrant and refugee beginner farmers. The farmers would grow food relevant to their native cultures on campus, which would then be featured in campus dining halls. As a final example, a third college partners with a nearby indigenous tribe to grow native crops using culturally specific techniques in campus gardens. These crops are then purchased by the campus food service and offered in the dining hall. These innovative examples show how campus agriculture projects and the regional food it produces can be intentionally used to increase the cultural relevance of food on college campuses.

In contrast to the associations shared above, one stakeholder shared their belief that regional food procurement and cultural relevance were negatively associated with each other. With an extensive background of regional food production, this stakeholder explained that regionally grown, culturally relevant crops were available in New England but were typically grown as

[9] We define student food access as the availability and affordability of nutritious and personally acceptable food on college campuses.

specialty crops on a small scale. The stakeholder believed that this small scale of production disincentivized colleges from procuring regionally grown, culturally relevant crops, and thus limited offerings of culturally relevant food offered on campus.

Three stakeholders did not believe culturally relevant food was being grown regionally for institutional markets. Culturally relevant food offered on these campuses was not cooked with regionally procured ingredients. This suggests that for some campuses, the cultural relevance of food and the regional procurement of food are separate domains with no association to one another.

In responding to this prompt, two stakeholders interpreted cultural relevance as being culturally relevant to New England. They reflected on how their colleges used programs like Harvest of the Month to feature regionally procured maple, apples, dairy, and seafood in ways that celebrated New England foodways.

Student Activities

In an attempt to flesh out how regional food procurement may be related to student food access in ways other than those spelled out in the prompts, we asked about regional food efforts on campus beyond the dining hall.

Examples of campus agriculture projects were a popular response. In total, seven out of eight colleges represented among the stakeholders had on-campus food production through various research, farm, and community garden models. Multiple stakeholders explained how campus agriculture projects engaged many groups of students across academic, sustainability, and extracurricular fields. Most stakeholders stated that food produced through campus agriculture projects typically got sold or donated to campus dining, thus providing the student population with a source of regionally procured food.

About half of the stakeholders mentioned student activities that revealed a growing interest in food access, food justice, and regional food systems among the student body. Student-led activities that stand out include a regional food restaurant pop-up club, a campus food recovery network, and regional food movements such as the Real Food Challenge and Uprooted 'N Rising. This student interest provided crucial support for regional food procurement. In fact, five stakeholders explained how the regional food agenda on campus was oftentimes driven by student demand and organizing efforts.

Future Visioning

In addition to asking about current regional food activities beyond the dining hall, stakeholders were prompted to share any visions they had on how regional food activities could

progress in the future. This prompt received a wide variety of responses, and while nearly half were not relevant to student food access, a few notable examples were shared.

As a general trend, stakeholders by and large viewed regional food on campus to be a rapidly growing movement. Some spoke from their multi-decade professional experience. Others pointed to external funding opportunities such as the Kendall Food Vision Prize. Stakeholders also revealed a growing yet geographically selective interest in regional food among food service management companies. All responses indicated that regional food is gaining traction on college campuses, and in a variety of ways.

Once again, campus agriculture projects played a starring role in responses. Two stakeholders dreamed of extending the harvest of campus farms by using new processing methods such as Individual Quick Freezing (IQF), a technique that allows crops to be easily frozen and stored for later use during the academic year. Two other stakeholders were looking forward to expanding the use of campus-produced crops on campus, one by creating a dedicated plot to serve the dining hall and another by increasing the use of campus-produced crops during the summer academic semester. Another stakeholder shared how ground was currently being broken for a large community garden on campus for students and faculty that would provide crops for campus food service and regional food banks. A final stakeholder shared news about a potential campus farm workshare program in which students, faculty, and staff could volunteer farm labor in return for farm products, the greater portion of which would be purchased by campus food service. Because campus agriculture projects have revealed themselves in earlier responses to be an opportunity for increasing culturally relevant food and improving actual and perceived regional food access for students, these examples of new and expanded campus agriculture projects may be relevant to future student food access.

Four stakeholders shared other, potentially relevant visions. One stakeholder envisioned a new large dining hall cum teaching kitchen emphasizing regional foods and student cooking and nutrition classes. This measure may provide students with increased opportunities to consume regional food on and beyond campus in the future. Another stakeholder planned to start a subsidized campus CSA to increase student accessibility to regional food. A third stakeholder mentioned aligning regional food activities in dining halls with the 21 Day Racial Equity Challenge. Finally, a fourth stakeholder hoped to implement campus-wide curriculum timing changes to allow students to have a communal lunch.[10] While these last two changes may increase regional food access or student food access, respectively, their pertinence to both themes simultaneously is unclear.

[10] This response was not elaborated on. However, it can be assumed that communal lunches may increase student food access by allowing time for students who are currently too rushed to eat between classes and by changing campus social norms, which may incentivize some students to eat lunch when they otherwise would not. Though this idea represents a creative vision which potentially could increase student food access, in light of current coronavirus social distancing needs, we share it only as a possibility for the future when gatherings are no longer a threat to public safety.

DISCUSSION

Multiple topics from the literature review and interview responses call for further discussion.

The trend of student-driven regional food procurement found in the interview responses and the literature review suggests that some college students are actively making decisions that shape their campus food systems. In other words, some college students are practicing food sovereignty. The characteristics of these food sovereign students are not apparent from the literature. We are left to wonder which kinds of students get to determine campus food system priorities, and which do not. If regional food procurement programs are pushed forward by means which sacrifice the food access and sovereignty needs of students with less wealth or race privilege, FTC's rising trend may serve to entrench food justice inequities. Further research on FTC student engagement is called for.

The richness of interview responses related to campus agriculture projects was unanticipated. Campus agriculture projects emerged as unique avenues through which to increase the equitable access, perceived access, and cultural relevance of regional food on college campuses. The mechanisms through which they accomplish this can be hypothesized. In addition to empowering participating students in a variety of ways, campus agriculture projects may serve to decrease cost and logistical barriers for the institutional procurement of regionally grown crops relevant to a diversity of cultures.

The interview responses regarding the New England cultural relevance of food may be seen as missing the point. While this is true of our original intention in prompting stakeholders to discuss cultural relevance, these responses introduced a new theme to our findings. They remind us of the variety of definitions placed on regional food and leave us with important questions: Does "regional" mean regional to the traditional majority culture of a place? Or does "regional" mean trans-regional, in that it is regional to the cultures of the people now inhabiting that place? This question also raises the primacy of place embedded in the celebration of regional food, regardless of which culture it represents. Regional food was grown here in the place you are inhabiting, and if that food is relevant to your culture, then it may take on a greater significance. As explored in the seminal work of Kloppenburg (1996), this place-based significance may be critical for motivating critical food consciousness, civic action, and environmentally sustainable behaviors.

Though our results provide a range of perspectives from a diverse group of stakeholders, these stakeholders are not representative of all New England colleges or regional food procurement programs. Therefore, the results found here are not generalizable to New England colleges or regional food procurement programs at large. it is also important to note that although stakeholder responses suggest associations between regional food procurement and different aspects of student food access, these associations are to be interpreted as correlations rather than causal links. To provide a relevant example, many factors may determine student participation in college meal plans. While meal plan participation was found to be positively

correlated with regional food procurement in some cases, it cannot be concluded that increased regional food procurement causes increased meal plan participation in these cases.

RECOMMENDATIONS

For colleges seeking to improve student access to regional food, we recommend intentionally utilizing campus agriculture projects. A variety of processes and objectives may be adopted as contextually appropriate, including the following:

⇒ Support student-led campus agriculture projects.

⇒ Work to increase the representation of students of different race, culture, and wealth among campus agriculture project leaders.

⇒ Work to increase the amount of campus-produced food going to students at affordable costs through campus food service or CSA programs.

⇒ Use campus agriculture projects to partner with community stakeholders representing different cultures and produce culturally relevant crops for campus food service.

⇒ Support the integration of campus agriculture projects with other social justice, sustainability, and food-oriented student groups and academic departments.

⇒ Center equity concerns around student food access as coronavirus continues to disrupt food systems and upend traditional higher education food service practices. Make every attempt to contain student food costs while increasing cultural relevance and reducing food access barriers.

To increase the visibility of student food access in a way that continues to probe its relationship with regional food procurement, we suggest the following recommendations for FINE:

⇒ Pursue further research focusing on student food access and regional food procurement from a student perspective. If possible, conduct interviews and focus groups with students who may not traditionally be prioritized by the FTC movement, including commuter students, international students, 3rd and 4th year students, students without meal plans, food insecure students, students participating in food insecurity coalitions on campus, and students who are not already engaging with campus regional food initiatives.

⇒ If the relationship between regional food and student patronage at different campus food venues is of further interest, reach out to the National Association of Colleges & University Food Services (NACUFS) for available data.

⇒ Include additional questions relevant to student food access on the Campus Dining Survey, such as:
  - Does your institution have an estimate of student food insecurity? If so, what percent of your students are food insecure?
  - Who on your campus is primarily focused on student food access and how closely does your dining services work with them?
  - Does the cost of regional food get passed along to students? If so, in which ways?
  - Does your institution use campus food production to grow culturally diverse crops? If so, please provide an example.

⇒ Release raw data from the Campus Dining Surveys with responses tagged to unique ID numbers so progress can be tracked over time on a disaggregated basis that continues to protect the confidentiality of survey respondents. Do so retroactively and in the future.

CONCLUSION

The FTC movement continues to grow, and colleges are procuring increasing amounts of food from regional sources. This trend may become accelerated due to the current coronavirus crisis as interest in supporting regional food systems continues to expand. As one such initiative, regional food procurement movements may rise as one of many responses that become part of the new normal. This would happen at the same time as student financial vulnerability increases due to widespread unemployment. Therefore, understanding the implications and possibilities of regional food procurement for student food access is critical. This report communicates the findings of one research project that begins to explore this topic and seeks to increase the prominence of this issue in the field of food justice.

POSTSCRIPT

As coronavirus continues to spread through our communities in the summer of 2020, it becomes increasingly apparent that higher education campuses will enter the next academic year during unprecedented times. Employment opportunities may remain limited, undermining students' financial stability. Many colleges may remain virtual-only. Campus dining services may remain closed, transfer to grab-and-go options, limit food offerings, or reopen with socially distanced formats. Additionally, the movement for racial equity is gaining traction across the

nation like never before. In light of all that is happening, centering student food access and food justice is of paramount importance. We implore colleges to continue the work towards ensuring affordable food costs for all students, increasing culturally relevant food offerings, and minimizing food access barriers, both physical and perceived.

REFERENCES

About Us. (n.d.). Farm to Institution New England. Retrieved May 30, 2020, from https://www.farmtoinstitution.org/about

Alkon, A. H., & Agyeman, J. (2011). Introduction. In *Cultivating Food Justice: Race, Class, and Sustainability* (p. 5). MIT Press.

Barlett, P. F. (2011). Campus Sustainable Food Projects: Critique and Engagement. *American Anthropologist*, *113*(1), 101–115. https://doi.org/10.1111/j.1548-1433.2010.01309.x

Bennell, S. (2008). *Going Local for a Change: Towards a Community Food Security Approach to Farm-to-University Development at Concordia University, Montreal, Quebec*. Concordia University (Canada).

Community Supported Agriculture. (2019, May). The Alternative Farming Systems Information Center: USDA National Agricultural Library. https://www.nal.usda.gov/afsic/community-supported-agriculture

Cronquist, K. (2019). Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2018. *U.S. Department of Agriculture, Food, and Nutirition Service, Office of Policy Support*, 162. https://fns-prod.azureedge.net/sites/default/files/resource-files/Characteristics2018.pdf

Direct Farm Sales of Food (No. ACH12-35; 2012 Census of Agriculture Highlights). (2016). USDA, NASS. https://www.nass.usda.gov/Publications/Highlights/2016/LocalFoodsMarketingPractices_Highlights.pdf

Gardner, L. D. (2012). *Down on the Farm: A qualitative study of sustainable agriculture and food systems education at liberal arts colleges and universities*. Michigan State University.

Google Trends. (2020, March 12). Google Trends. https://trends.google.com/trends/explore?date=all&geo=US&q=local%20food

Gustafson, K. (2012, May 20). What Colleges Can Bring to the Table. *The Chronicle of Higher Education*, 3.

LaCharite, K. (2016). Re-visioning agriculture in higher education: The role of campus agriculture initiatives in sustainability education. *Agriculture and Human Values*, *33*(3), 521–535. https://doi.org/10.1007/s10460-015-9619-6

Leighton, H., Oberholtzer, L., Allison, P., Taranovski, T., Haskins, K., & Gallagher, L. (2018). *Campus Dining 201: Trends, Challenges, and Oppotunities for Farm to College in New England*. Farm to Institution New England. https://www.farmtoinstitution.org/sites/default/files/imce/uploads/FINE%20Campus%20Dining%20Report.pdf

Low, S. A., & Vogel, S. J. (2011). *Direct and Intermediated Marketing of Local Foods in the United States* (SSRN Scholarly Paper ID 2114361). Social Science Research Network. https://doi.org/10.2139/ssrn.2114361

Nazmi, A., Martinez, S., Byrd, A., Robinson, D., Bianco, S., Maguire, J., Crutchfield, R. M., Condron, K., & Ritchie, L. (2019). A systematic review of food insecurity among US students in higher education. *Journal of Hunger & Environmental Nutrition*, *14*(5), 725–740. https://doi.org/10.1080/19320248.2018.1484316

Osei, Z. (2019, February 14). In Dealing With Campus Hunger, One Solution Is to Tell Students Where They Can Get Help. *The Chronicle of Higher Education*, 3.

Rector, K. (2020, May 5). Rotting food. Hungry masses. Chaotic supply chains. Coronavirus upends the U.S. food system. *Los Angeles Times*. https://www.latimes.com/california/story/2020-05-05/coronavirus-food-supply-chain-makers-distributors-retailers

Regan, J. (2015). *The Alternative Campus Food System at Dalhousie University: Exploring the experience of participants in student-led food initiatives on Studley campus* [Thesis]. https://DalSpace.library.dal.ca//handle/10222/56669

Richman, N., Ha-Ngoc, T., Oberholtzer, L., Obadia, J., Haskins, K., & Allison, P. (2017). *Campus Dining 101: Benchmark Study of Farm to College in New England*. Farm to Institution New England. https://www.farmtoinstitution.org/sites/default/files/imce/uploads/FINE%20Farm%20to%20College%20Report_1.pdf

Special Report: COVID-19 is Taking a Bite out of Food Supply Chains. (2020). S&P Global. https://www.spglobal.com/en/research-insights/featured/covid-19-is-taking-a-bite-out-of-food-supply-chains

Students | SNAP. (2013, November 7). USDA Food and Nutrition Service. https://www.fns.usda.gov/snap/students

The Benefits of Farm to School (p. 6). (2017). National Farm to School Network. http://www.farmtoschool.org/Resources/BenefitsFactSheet.pdf

Thomas, L. N., & McIntosh, W. A. (2015). Local Food Consumption Is Associated With Higher Healthy Eating Index Score. *Journal of Hunger & Environmental Nutrition*, *10*(4), 539–548. https://doi.org/10.1080/19320248.2014.962781

Valiente-Neighbours, J. M. (2012). Mobility, embodiment, and scales: Filipino immigrant perspectives on local food. *Agriculture and Human Values*, *29*(4), 531–541. https://doi.org/10.1007/s10460-012-9379-5

Picture Source

VT Farm to Plate. New England Farm to Institution Summit logo. 2017. https://www.vtfarmtoplate.com/events/1124#.XvqIv5NKjlw.

APPENDIX

Interview Prompts

- **In these times of upheaval and resilience, what are the biggest impacts on regional food and food access you are experiencing on your campus or in your community?**
- **Acknowledging that things may be different at this time, but thinking on past experiences, do you think or do you have any evidence that regional food procurement is related to...**
    - **the nutrition of food served on campus?**
        - Clarification: Improved nutrition may be represented by more fruits and vegetables being offered or transitions from more processed to less processed foods.
    - **the cultural relevance of food served on campus?**
        - Clarification: Culturally relevant foods include dishes and ingredients traditionally important to cultures outside the New England region. Examples may include grits or collard greens for Southern US cultures, empanadas or tomatillos for Latino/a cultures, and rice porridge or water chestnuts for Asian cultures.
    - **the cost of food served on campus?**
        - Clarification: The cost of food may become more or less expensive for the institution. This cost may or may not be passed down to the student purchasing the food. Changes in both institutional and student costs are relevant to this question.
    - **where students decide to get their food from?**
        - Clarification: Students may get food on-campus from dining halls, franchises, stores, and food pantries. Students may get food off-campus from stores, franchises, restaurants, food pantries, and farmers markets, among others.
    - **the structure of campus meal plans or meal plan participation?**
    - **the amount of food waste on campus?**
    - **food curriculum, groups, or activities on campus?**
        - Clarification: These may include food studies programs; campus farms; food movements like the Real Food Challenge or the Good Food

Purchasing Program; Diversity, Equity, and Inclusion (DEI) programs and policies; campus kitchens; in-house food service; culinary staff; overall food budgets; etc.

- **In the future, how do you think regional food procurement could become related to food curriculum, groups, or activities on campus?**
- **How does access to regionally procured foods change for students of different race or income level?**
- **In your experience, are there any other ways regional food procurement is or could be related to student food access or food justice?**