

FARM TO TABLE DESIGN PROJECT

Prepared by:

University of Washington MS/MPH Students

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UW NUTRITIONAL SCIENCE PROGRAM MS/MPH STUDENTS

Diana Aguilera

Cairo Archer

Jessa Engelken

Josh Floberg

Anna Fogel

Lexie Garrity

Molly Knowling

Dani Ladyka

Dorothy Nguyen

Sarah Perlin

Maryann Ruiz

Lauren Sawyer

Allie Seroussi

Stephanie Winterbauer

Kazue Yoshida

COURSE INSTRUCTORS

Jesse Jones-Smith, PhD, MPH, RD

Lina Pinero Walkinshaw, MPH

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1 EXECUTIVE SUMMARY

1.1 BACKGROUND

Given the prevalence of food insecurity among Seattle's low-income families with children, the Farm to Table program was developed to address the need at hand. The main goal of the Farm to Table program is to increase access to locally farmed and produced food for early care and education centers in order to address health and food security inequities, while also supporting the local farm economy.

This goal is met through the Farm to Table childcare and afterschool program, and works to address food insecurity by providing participating childcare homes, childcare centers, and after school or out- of-school time programs, with funds to purchase fresh farm foods, including fruit and vegetables, from local farmers. These fresh farm foods are then delivered to the participating sites by the Farm to Table program. Additionally, the Farm to Table program provides participating sites with nutrition and gardening education, kitchen staff training, and scratch cooking, all in hopes of creating and fostering a healthy environment.

1.2 PROJECT PURPOSE AND GOALS

The purpose of this project is to assist the Farm to Table program with data collection by conducting a literature review and interviews with families and early care and education center staff to help inform the early phases of assessment for program development and potential re-design. The outcome of this project is a set of program implementation recommendations that can inform future decisions regarding funding levels, program activities, program evaluations, and policymaking.

1.3 METHODS

This project was conducted by a research team of Nutrition Sciences graduate students at the University of Washington as part of the Nutrition 531 Public Health Nutrition course under the supervision of two faculty members. We used the first three steps of the PRECEDE-PROCEED Model to guide the data collection and recommendation development steps of this project. Steps 1 and 2 were completed during our data collection period. The goal of step 1 was to understand community perspective on healthy food, while in step 2, we had key stakeholders and similar programs identify what they thought goals and outcomes of the Farm to Table program, and farm to early care and education programs in general should be. Lastly, in step 3 we used the results of our data collection to create recommendations for the Farm to Table program that reflect the needs identified by the community.

A literature review was conducted in order to identify other farm-to-early care education programs, or any other program with efforts in food access/food justice programming nationally. The purpose of this literature review is to identify strengths and challenges of similar programs and to apply this knowledge into shaping the recommendations for the Farm to Table design project.

Data collection for this project consisted of telephonic interviews conducted by University of Washington students and directed towards early care and education staff, and parents/families of students receiving Farm to Table programming. The purpose of these interviews is to help the Farm

to Table program learn from its participants about (1) how the participating community defines “healthy food” and “healthy food access” in childcare and afterschool environments, (2) how the participating community would define a successful, equitable, and culturally minded food access program in these settings, and (3) what activities and supports are needed to achieve healthy food access in childcare and afterschool programs.

1.4 EARLY CARE AND EDUCATION CENTER STAFF INTERVIEW RESULTS

We conducted individual phone interviews with nine Seattle early care and education center staff members. All centers were participating in the Farm to Table program at the time of interviews, with one yet to complete their first food order with the program. The number of children attending the early care and education centers ranged from 12 to 350 with ages as young as one month old and as old as 13 years. Many centers provided childcare for children predominantly from low socioeconomic status while others had similar enrollment of children from both low and high socioeconomic status. The number of sites of each early care and education center varied with some only having a single location while one had 12. There was also variation in how many meals and snacks were prepared daily at each center. One center used Farm to Table food for curriculum purposes only, but the children did still get to eat this food as a part of the learning activities.

Overall, early care and education center staff defined success for the Farm to Table program as exposure to fresh foods for the children. Interestingly, staff members overwhelmingly indicated they do not know enough about the Farm to Table program nor its goals. However, once the goals/values were read to them, they unanimously agreed with the current goals of the Farm to Table Program and did not suggest any additional goals for the program to achieve. All early care and education staff agreed with the Farm to Table principles and stated they align with their experience with the program. Some staff members expressed a desire for these values to be made more visible to early care and education staff and children.

1.5 FAMILY AND PARENT INTERVIEW RESULTS

In this study, we interviewed 7 parents with children that attend early care and education centers in the Seattle area (Tiny Tots, ReWa Lake City Early Learning Center, Launch Miller Annex and ARC Northgate). Each parent had at least one child that attended the early care and education centers and some families had multiple children. There was no income requirement for participation, so families that were interviewed may have represented a variety of socioeconomic status. However, the primary targets for this study were families of lower socioeconomic status that are most affected by the Seattle Sugary Beverage Tax.

An overall theme among the parent and family interviews was the incorporation of healthy and fresh food into their children’s meals at home, but some common barriers that limit their access to healthy and fresh food still persist. At the early care and education centers, the parents would like their children to have a variety of foods and to be empowered by the choices that they make. In addition, they would like their children to incorporate healthy eating habits gathered from the early care and education centers at home. Several families expressed that If their children can see where the food comes from, it will help with keeping them engaged and interested in the food that is being served. One challenge to participating in the Farm to Table program mentioned by the parents was the overall lack of communication about the program, leading to a lack of knowledge and familiarity surrounding the food being provided for the children.

Overall, the parents are pleased with the Farm to Table program, but there was some confusion in distinguishing this program from the Good Food Bags. By the results gathered from some of the interviewed families, there is not a set direction the parents would like the program to go; mostly because the parents did not have a clear understanding of what the program does and where the funding comes from.

1.6 RECOMMENDATIONS

In evaluating the Farm to Table program, recommendations were developed to address three primary areas: program goals and outcomes, support for early care and education centers, and parental involvement. Our results found that there was minimal awareness and involvement from various early care and education center staff and parents regarding the Farm to Table program. It became clear that the Farm to Table program was being underutilized and in order to maximize utilization, early care and education centers need more support. Although they were participating in the program, most early care and education center staff and parents had misinformation or confusion about the Farm to Table program and suggested increased staff and parent awareness through marketing and advertising. Although parents are not directly impacted by the Farm to Table program, education and awareness is key for families to continue exposing and educating children about healthy foods at home. To enact change effectively, reevaluation of the Farm to Table program intentions, increasing support for early care and education centers, and encouraging parent involvement is necessary in the effort to provide access to local, high-quality food to preschool-aged children.

2 INTRODUCTION

The City of Seattle Farm to Table program is an initiative designed to provide funding, technical assistance, and educational support for early care and education centers to enable the centers to purchase and serve farm fresh foods from local farmers. Bolstered by an increase in funding from the City of Seattle’s Sweetened Beverage Tax revenue, the Farm to Table leadership team (composed of individuals from City of Seattle Human Services Department, Farmstand Local Foods, Nourishian for Life, Tilth Alliance, and Solid Ground) hopes to explore and potentially re-envision how the program can best align its services and goals with those of the community it serves.

The purpose of this project, conducted by University of Washington Nutrition Sciences graduate students, is to assist the Farm to Table program with data collection and analysis by conducting a literature review, as well as interviews with both families and early care and education center staff. This will serve to illuminate behavioral and environmental targets that may be used for program improvement and can help inform program development. The outcome of this project includes results from this data collection, and a set of program implementation recommendations that can inform future decisions regarding funding levels, program activities, program evaluations, and policymaking.

Farm to Table Program Design Project goals include:

- Learn how the community served by the program defines “healthy food” and “healthy food access” in childcare and afterschool environments
- Learn how the community served by the program would define a successful, equitable, and culturally minded food access program in these settings
- Learn what activities and supports are needed to achieve healthy food access in childcare and afterschool programs
- Learn how the program can best align its services and goals with those of the community it serves

2.1 BACKGROUND

2.1.1 Food Inequity in Seattle

Food insecurity has been associated with a variety of negative health outcomes, including overweight/obesity, in children and adult populations.^{1,2} As of 2019, the prevalence of adults experiencing food insecurity in Seattle was 13%.³ Moreover, the prevalence of food insecurity among families with children was substantially higher, with an estimated 51% of low-income families with children experiencing food insecurity.³ Overall, food insecurity is more prevalent among those in lower income and lower educational brackets, those in the LGBTQIA+ community, and among people of color, who experience higher rates of food insecurity than white populations.³ Additionally, a number of people are not eligible to receive federal or state food assistance benefits (e.g., SNAP/EBT) and lack sufficient funds to buy food, also known as the “food security gap.” In 2017, an estimated 13,420 Seattle residents fell into this category.³

Accessibility and affordability of food are additional barriers that affect various communities within Seattle.³ Neighborhoods that are low-income or have higher proportions of African American or Hispanic residents have less access to food stores and experience lower availability of affordable, healthy food, as compared to higher-income, majority white neighborhoods.³ In 2012, it was found that the number of low-income families residing in King County that lived a short bus ride away from a supermarket considered to be low- or medium-cost was less than 8%.³ Food assistance programs like SNAP and WIC can help overcome the barriers to affording food, but miss the group of households that experience the food security gap. Thus, decreasing the prevalence of diet-related diseases and other negative health outcomes, which disproportionately affect these communities,^{3,4} will likely require a multi-dimensional approach to decrease the prevalence of food insecurity and increase food access among Seattle residents.

In addition to these components, there are a number of social factors (e.g., cultural traditions) and individual influences (e.g., taste preferences) surrounding meals that may impact how children and families engage with food. Prior research suggests that children's taste preferences evolve over time as a result of food they interact with early in life, and that these preferences can persist into adulthood.^{5,6} Additionally, an increase in healthy food preferences may be predicted by the nutritional knowledge one possesses.⁷ Increasing exposure and access to locally grown, fresh farm foods (e.g., fruits and vegetables) during a time when children are developing food interests and preferences could promote dietary habits that influence positive health outcomes later on. However, addressing issues like food insecurity requires more than individual-level interventions. Hence, supporting increased fruit and vegetable access for young children in institutional environments like early care and education centers may serve to improve health outcomes, and increase availability of these foods for children living in households that face other economic, social, and structural barriers to obtaining these foods.⁶

2.1.2 Efforts to Improve Healthy Food Access

In 2010, the City of Seattle developed the Farm to Table initiative as a pilot program to increase access to locally farmed and produced food for early care and education centers in order to address these health and food security inequities, while also supporting the local farm economy. The program seeks to address previously identified concerns regarding the health inequities experienced by low-income households and other vulnerable populations in Seattle, and to improve the relationships between local farmers and consumers. With these goals in mind, the Farm to Table program operates with the following values and guiding principles: access to quality food, community connection, health equity, appreciation for farm workers, honor the land our food comes from, respect culture and tradition, enjoy and celebrate food, and resilient and regenerative practices.

In 2013, a Seattle Food Action Plan (FAP) was adopted by the Mayor and City Council to build upon previous work established by the 2008 Local Food Action Initiative, which sought to improve the local food system.⁴ The FAP consists of four aims: (1) to increase access to local, healthy food; (2) to increase opportunities for urban farming; (3) to bolster the regional economy by supporting businesses that promote the utilization of local food; and (4) to reduce food waste.⁴ In an effort to accomplish the first three aims, with oversight from the city's Office of Sustainability and Environment, a set of strategies were established that included expansion and increased support for the Farm to Table program.

As of January 2020, the Farm to Table program worked with 64 early care and education centers serving 3,000 youths and was fully funded by revenue sourced from the City of Seattle's 2017 Sweetened Beverage Tax. The Farm to Table program is run by multiple community partners that manage food procurement, provide early care and education centers with technical assistance and training, and offer educational opportunities for the youth participating in early care and education centers. Farmstand Local Foods is a local organization which links local farmers with consumers and carries out food procurement for the Farm to Table program, connecting early care and education centers with over 40 farms within Washington state (prioritizing those within a 40-mile radius of Seattle) via an online marketplace. Early care and education centers order farm fresh foods through the online marketplace using grant funds from the City's Farm to Table program; Farmstand Local Foods picks it up from the farms and delivers it to each center to use for snacks and meals. This enables each center to place orders for foods that are local and sustainably grown with a smaller carbon footprint and providing revenue for local farmers. Solid Ground and Tilth Alliance provide educational support to early care and education centers in the form of cooking demonstrations, gardening assistance, and farm field trips to increase engagement among students. They also provide support at family events by hosting farm stand pop-ups to help increase awareness of the Farm to Table program among parents. Solid Ground is a nonprofit in Seattle that provides community services centered around housing, legal and financial assistance, food and nutrition, and transportation. Tilth Alliance is a nonprofit that provides community members with education on cooking, gardening, and soil health, and supports farmers by connecting them with resources and markets. Early care and education staff training and technical support is provided by Nourishian for Life (operated by a registered dietician and certified STARS trainer) in the form of menu planning, lesson plan development, and cooking instructions to help early care and education centers further engage students with Farm to Table activities.

2.2 UTILIZING THE PRECEDE-PROCEED MODEL

The PRECEDE-PROCEED model (PPM) is a planning model that outlines an ecological approach for conducting public health interventions. Encompassing both planning and evaluation phases, the PPM allows for identification of objectives and sub-objectives to meet a previously identified goal. The PRECEDE portion of the model accounts for various forms of assessment, while the PROCEED portion accounts for administrative assessments along with implementation and evaluation.⁸ For the purposes of this project, we implement steps 1-3 of the PPM. These steps provide guidance to programs to conduct a social, epidemiological, and behavioral and environmental assessment⁸ in order to identify community-driven needs and objectives for programs and program activities. Upon completion of this project, the Farm to Table leadership team can continue the next phase of the Farm to Table Program Design Project by utilizing steps 4-9 of the PPM. These include further assessment of educational, ecological, policy, and administrative factors; implementation; and evaluation of processes, impacts, and outcomes of the design project.⁸

3 METHODS

This project was conducted by a research team of Nutrition Sciences graduate students at the University of Washington as part of the Nutrition 531 Public Health Nutrition course under the supervision of two faculty members. We used the first three steps of the PPM to guide the data collection and recommendation development steps of this project. Steps 1 and 2 were completed during our data collection period. The goal of step 1 was to understand community perspective on healthy food, while in step 2, we had key stakeholders and similar programs identify what they thought goals and outcomes of the Farm to Table program, and farm to early care and education programs in general should be. Lastly, in step 3 we used the results of our data collection to create recommendations for the Farm to Table program that reflect the needs identified by the community. These recommendations are focused specifically on environmental and behavioral factors that the Farm to Table program could target in order to achieve their desired program outcomes. The Farm to Table leadership team is now able to complete steps 4-9 of the PPM to guide the rest of the 2020 Farm to Table Design project.

To implement this project, we divided into three teams of five or six students each: a family/parent team, an early care and education staff team, and a literature review team. The research questions we answer in this project include: (1) how does the participating community define “healthy food” and “healthy food access” in childcare and afterschool environments, (2) how does the participating community define a successful, equitable, and culturally minded food access program in these settings, and (3) what activities and supports are needed to achieve healthy food access in childcare and afterschool programs, guided data collection, data analysis, and recommendation creation.

3.1 DATA SOURCES

Data for this analysis came from four main sources:

1. Interviews with program parents
2. Interviews with early care and education staff
3. Traditional literature review of published and grey literature
4. Interviews with similar programs and document review

3.2 DATA COLLECTION

3.2.1 Telephone Interviews

In January 2020, the parent/family and early care and education staff teams conducted telephone interviews with two key Farm to Table stakeholder groups – early care and education staff, and parents and families of students receiving Farm to Table programming. The City of Seattle identified early care and education staff and participating family members from a variety of program sites who agreed to be interviewed within a two-week window. Interviewers emailed staff and families to set up interview times. If there was no response to the email, the research teams sent a follow-up email, and if still no response, followed up via phone call. If no contact was made after two emails and a phone call, then no further contact attempts were made.

Interviews were audio-recorded and conducted in pairs, with one person conducting the interview while the other took detailed notes. Interviewers utilized a script developed collaboratively by the Farm to Table team and the *Public Health Nutrition* course instructors. The script provided context for the purpose of the interview, intent of data use, and a verbal consent to record the interview. The interviews consisted of twelve to fourteen open-ended questions. Participants were given a \$50 gift card to either Amazon, Safeway, Fred Meyer/QFC or Target upon completion. Each interview lasted between twenty minutes to an hour, and we conducted all interviews in English. After each interview, the interview teams created a transcript of the call using the recording and interview notes. The transcripts included a thorough summary of what the interviewee said, and we transcribed verbatim several direct quotes that were illustrative of key themes of the interview.

3.2.2 Parent and Family Interviews

The parent and family interviews consisted of twelve open-ended questions. The first half of the interview gathered general information on habits and experiences with food at home. The interview team asked about current eating patterns, ideal eating patterns, the benefits and challenges of buying and eating fresh foods, as well as what parents and families would like their children to be fed while in preschool or afterschool programs. The second half of the interview asked participants to share their opinions on what a successful community food program should look like, and their impressions of the Farm to Table program values. Questions in both sections of the interview asked specifically about the importance of culturally familiar foods at home and at school.

3.2.3 Early Care and Education Staff Interviews

The early care and education staff interviews were comprised of fourteen open-ended questions. Before the interview began, the interviewer confirmed that staff were speaking about participation in the Farm to Table program specifically, and not other food-related programs the site may participate in (i.e. the Good Food Bag program). The first half of the interview gathered information about how early care and education programs currently engage in food service, including questions about student food preferences, ideal menus, and the benefits and challenges of serving fresh foods. The second half of the interview queried opinions and experiences about the Farm to Table program, particularly regarding food offerings, education and technical assistance, as well as Farm to Table program goals and values.

3.2.4 Literature Review

To identify current literature on farm to early care and education programs, the literature review team completed a traditional literature review of published and grey literature. A University of Washington librarian conducted a search using the terms “farm to preschool” and “farm to early care and education” on Web of Science, PubMed, Scopus, Academic Search Complete, Agricultural and Environmental Science Collection, and ERIC and generated a preliminary source list. Grey literature databases were searched to identify additional articles and resources on farm to early care and education programs that were not published in scientific journals. Several sources were also provided based on a previously completed University of Washington capstone project, *A Needs Assessment of the Seattle Farm to Table Program*.⁴¹

The goal of this literature review was to answer the following questions:

- 1) What are the social, economic, or health impacts of farm to early care and education programs (with attention to study design, noting limitations and strengths of this literature)?
- 2) What have been the successes, challenges, and barriers to implementation of farm to early care and education programs?
- 3) What strategies have farm to early care and education programs used to overcome these challenges and barriers?

A total of 32 primary literature sources were used to conduct the review, and included a combination of reports, program evaluations, and quasi-experimental study designs. The sources addressed various components of farm to early care and education programs including nutrition education, food preferences/tastings, diet quality, garden curricula, curriculum evaluation, farmer involvement, exposure to foods, and agricultural education. The literature also captured the voices of a wide variety of stakeholders including dietitians, community organizations, academics, childcare providers, and government officials.

3.2.5 Regional Program Outreach Interviews

The literature review team contacted programs across the US that are also farm to early care and education organizations or have implemented important components of farm to early care and education including, but not limited to, nutrition education, cooking classes, gardening curricula, local food procurement, and agricultural education. The interview team contacted organizations from a list that had been compiled for the Farm to Table Needs Assessment capstone project, and one organization featured in a core course reading. A total of ten programs were contacted via email and were asked to participate in a phone interview. Each organization was contacted initially via email, and if there was no response then team members, sent a follow up email, and if there was still no response, made a phone call to the program. A total of 3 contact attempts were made for programs who were non-responsive.

Each interview used 8 open-ended questions to guide the conversation, and no formal script was used. The first section of the interview covered broad successes and challenges the programs faced, with specific questions geared at learning how programs measure success, and what lessons they have learned. The second section of the interview asked about perspectives on incorporating community voice into programming, budgets and funding, reporting metrics, and definitions of 'local' and 'sustainable' food procurement. Detailed notes were taken during the interviews.

3.3 DATA ANALYSIS

3.3.1 Interviews

Both the parent and family and early care and education staff interview teams used the following method to analyze contents of the interviews:

Each of the five or six team members read the transcripts of each interview their team conducted. Then each team member wrote summaries for each transcript they read, identifying key themes and discussion points that came up in the interview. Direct quotes and recaps of ideas were included to support each key theme. Each team member then wrote a multi-page summary to synthesize the primary takeaways for all the interviews using the individual interview summaries as a guide. Next, each member shared their multi-page summary with other members of their interview team. After group deliberation, each group created a final results summary to encompass the experiences, perceptions, opinions and values shared by parents and families, and early care and education staff.

Members of the literature review team each read the detailed notes of the regional program outreach interviews, and then created one overarching summary of findings. The overarching summaries were shared amongst the literature review team, and after group deliberation and reconciliation, one overarching summary of results was created. These results were then combined with the results of the traditional and grey literature reviews to create a final results summary.

3.3.2 Literature Review

To analyze the results of the traditional and grey literature review, the literature review team maintained an Excel spreadsheet listing each source reviewed as well as the three overarching research questions. The spreadsheet also tracked research methods, results, discussion, and any next steps identified in each article. The team read the literature, and then filled out the Excel spreadsheet with their findings as they related to the three main research questions. In order to identify the major impacts of farm to early care and education programs, one team member read through the notes that were taken for research question one. Each unique program impact was identified, then grouped with other similar identified program impacts (e.g., improved diet quality, and increased fruit and vegetable consumption), and totaled based on those with the most evidence. The most well-documented, evidence-based impacts were included in the final results summary.

To identify successes, challenges, and barriers as well as solutions to any challenges faced by farm to early care and education programs, each member of the literature review team created a results summary of the major themes from across all articles included in the traditional review. Then, each team member shared their summary with each other, and met together to discuss the emergent barriers, challenges and possible solutions. After group deliberation and reconciliation, one overall results summary was created. These results were combined with the top four program impacts of farm to early care and education programs, and results of the regional program outreach interviews to create a final literature review results summary.

3.4 RECOMMENDATION DEVELOPMENT

To develop recommendations, everyone from each of the research teams read the three, final results summaries: the parents and families final results, the early care and education staff final results, and the literature review final results. The teams met as a group to discuss the results, overarching themes and discoveries we learned during the data collection process. Using the information from this discussion, two individual students wrote a first draft of recommendations for the Farm to Table leadership team. The teams then met again as a group to discuss and provide feedback on the first draft of recommendations and develop a final recommendations list.

4 LITERATURE REVIEW

Farm to early childcare and education is a model designed to bring 1) local food sourcing, 2) school gardens, and 3) food and agricultural education into early care and education centers nationwide.⁹ Increased childhood obesity prevalence and chronic disease rates have prompted attention to the importance of diet quality and healthy behavior change. Both diet quality and healthy behavior change could be promoted in early care and education centers, as children spend much of their time in these facilities.⁹ In establishing farm to early care and education, the National Farm to School Network aimed to align with the existing goals of early care and education centers themselves, which include experiential learning, health and wellness, family and community engagement, and meeting programmatic and early learning standards.⁹ By encouraging a food system and environment that can be integrated into any classroom or geographic region, farm to early care and education can be adapted to any population to promote health equity.⁹

4.1 NON-TRADITIONAL LITERATURE REVIEW

Responses to each research question were compiled from interviews with seven organizations that incorporated farm to early care and education programming. A summary table of the organizations included in this analysis can be found in Section One of the Appendix.

4.1.1 What Farm to Early Care and Education programs exist nationally?

We interviewed seven farms to early care and education programs nationally. We selected these programs for interviews based on availability and similarity to the City of Seattle's Farm to Table program. The seven programs included in this non-traditional literature review were:

- **Colusa Indian Community Hand in Hand Learning** *Colusa County, California*
- **Growing Minds Appalachian Sustainable Agriculture Project Farm to School Program** *Asheville, North Carolina*
- **Harvest for Healthy Kids** *Portland, Oregon*
- **Little Ones Childcare** *Forest Park, Georgia*
- **North Carolina Farm to Early Care and Education** *Raleigh, North Carolina*
- **Sunrise Project** *Lawrence, Kansas*
- **Wake County Smart Start-** *Raleigh, North Carolina*

4.1.2 What makes these programs successful?

Several strategies employed by the programs selected for interviews contributed to their success. Most of the programs focused on qualitative measurements of success.^{32,33,34,35,37} These strategies can be categorized as follows: curriculum implementation, lesson plan design, procurement and resources, community involvement, and policy-based initiatives.

Curriculum Implementation

Farm to early care and education curricula was successfully integrated into classrooms that supported the mission of these programs throughout the facility. Successful curriculum implementation included:

1. The incorporation of activities and training into the hiring process for childcare centers.^{32,35,36}
2. Enthusiastic staff participation in farm to early care and education activities.^{32,34,35}
3. Clear reinforcement of the power teachers have to influence childhood health, eating behavior, and nutrition education.^{32,35}

The most well-received curriculums were created through multi-stakeholder collaboration and were evaluated for classroom feasibility.^{33,34} This helped educators understand the value of farm to early care and education³⁴ and also increased child enthusiasm for the programs.^{32,38}

Lesson Plan Design

Active, hands-on lessons were the most engaging for children. These lessons included taste tests, cooking classes, sampling tables, gardening, and farm field trips.^{33,34,36,38} Lesson plan implementation was easiest when the curriculum was incorporated into existing Head Start and/or Child and Adult Care Food Program requirements for childcare center educators, directors, and staff.^{33,34} One organization even centered their farm to early care and education curriculum around core competencies for the Dietetic Internship in order to work with training dietitians on program implementation, food service, and nutrition education.³³

Procurement and Resources

Procurement was most successful when programs accounted for the unique needs of each center.^{37,38} Furthermore, successful programs provided classroom materials and resource support when possible and adjusted their curriculum based on center constraints and staff needs.^{33,35,37,38} Food procurement went smoothly when centers were in consistent communication with farmers and distributors.^{33,36,38} Some centers hired liaisons to fulfill this role, which helped reduce the burden on teachers and childcare staff.³⁵

Community and Parent Involvement

Extending farm to early care and education initiatives past the classroom and into the community was crucial for program success and sustainability.^{32,35,36,38} Community gardening activities, fundraising events, Cooperative Extension partnerships, non-profit involvement, and volunteering from service groups were all methods of engaging community members.^{32,35,38} Encouraging parent involvement through parent nights, taste tests, gardening events, parent newsletters, and parent-specific education helped reinforce learning from in-class programs outside of the classroom.^{37,38}

Policy-Based Initiatives

Some larger organizations were working towards system-level policy changes to incentivize the incorporation of farm to early care and education programs into the classroom.³⁷ North Carolina Farm to early care and education in particular measured success based on the number of farm to early care and education partnerships it helped facilitate with centers. This organization pushed for new Quality Rating and Improvement System (QRIS) evaluations of childcare facilities to include questions about food sourcing, nutrition education, and gardening activities in their childcare ratings. They also focused on increasing food access in North Carolina and promoting racial equity.³⁷

4.1.3 What challenges or barriers have these programs faced?

Despite the many successes of farm to early care and education programs, these programs faced several notable challenges. These challenges are categorized as follows: lack of resources, reduced buy-in, procurement issues, and cultural barriers.

Lack of Resources

A lack of resources was a challenge experienced by all programs interviewed. Funding and time were particularly limited^{32,33,34,35,36,37} with one organization having to close their farm to early care and education program due to lack of funding.²⁸ A lack of resources for farm to early care and education activities such as cooking supplies, storage space, kitchen space, and field trips were also major challenges for educators.^{33,34,36} At the macro level, a lack of political incentivization for farm to early care and education programs and financial support from state and federal governments was an ongoing barrier.³⁷

Reduced Buy-in

Securing buy-in from teachers, staff, parents, and farmers was a challenge for many programs. Teachers and staff often felt like the farm to early care and education activities and curriculum were “just another thing to do,”^{32,33,34} especially when centers were underfunded and understaffed. This reduced teacher excitement and engagement in activities or lesson plans, impacting child engagement.^{32,33,34,37} For those working with on-staff farm to early care and education representatives, child care center engagement was high when representatives were at a school site, but dropped off when that staff member left.^{34,36} Additionally, some parents were skeptical of the programming, and became defensive about what to feed their children.^{32,35} Farmer buy-in was difficult when produce orders were not large enough to generate profits and when farm to early care and education markets were inconsistent.^{37,38}

Procurement Issues

A range of procurement issues affected the implementation of farm to early care and education programs, and put excess strain and burden on teachers and childcare staff. Some centers had an overwhelming amount of procurement options while others only purchased from a single commercial distributor, which made local sourcing a challenge.^{32,37,38} Also, strained communication between centers, distributors, and farmers often resulted in incorrect, inconvenient, or missed deliveries.^{33,37,38}

4.1.4 What strategies from these programs could be applied to the Seattle Farm to Table program?

The following strategies and lessons learned were shared by the farm to early care and education programs interviewed. These strategies could be utilized in many aspects of the Seattle Farm to Table program and support the recommendations provided later in this document.

1. Employ a bottom-up approach towards nutrition and sustainability^{32,33,34,35,36,37,38}

This approach incorporates community voice and stakeholder needs into program design, planning, and implementation. Some ways of using the bottom-up approach that have been utilized by other programs include:

- Providing centers with choices in procurement options.

- Incorporating community voice and concern for chronic disease development into program goals.
- Ensuring farm to early care and education curricula helps centers meet existing Head Start and or Child and Adult Care Food Program requirements for childcare center staff, educators, and directors.

2. Use hands-on curricula that have been evaluated for classroom feasibility ^{33,34,36,38}

Hands-on curricula was favored by children and offered multiple modes of education to reinforce nutrition and food concepts. Some hands-on learning strategies used by other programs include:

- Taste tests
- Gardening
- Cooking classes
- Produce identification
- Cooking demonstrations

3. Support farmers and form lasting relationships with their businesses ^{32,35,38}

Programs felt that supportive relationships with farmers enhanced parent, teacher, staff and child knowledge about where food comes from and the importance of supporting farmers economically through childcare center markets. Some strategies programs used to highlight this goal were:

- Communicating with parents and children on why local produce tends to be more expensive.
- Discussing this goal and what that means during staff farm to early care and education training.
- Prioritizing working with female farmers and farmers of color.

4. Trial different methods for food preparation and delivery ^{33,37,38}

Many classrooms did not have the kitchen or storage space necessary for fresh produce preparation and/or did not have the necessary trained staff for it. This resulted in food spoilage and waste that childcare centers had to manage. Programs used creative strategies to provide children with local produce without creating unnecessary burden on the childcare center:

- Centralized kitchens or public kitchens used for food preparation. Foods delivered ranged from minimally processed produce to fully prepared meals.
- Partnerships with catering services to deliver ready-made meals.
- Hiring trained chefs who are also Registered Dietitians.

5. Use a variety of different methods for parent engagement ^{32,33,34,35,36,37,38}

Several organizations indicated that parent engagement was crucial for the reinforcement of nutrition knowledge and newfound food preferences outside of the classroom. Many different forms of parent engagement were deemed successful:

- Newsletters
- Family Nights
- Parent-child cooking classes and taste tests
- Presentations
- Gardening activities

6. Incorporate the voice of teachers and staff early in program implementation ^{32,33,34,37,38}

Teacher and staff buy-in was found by every organization to be imperative in successful farm to early care and education programs. Some strategies to incorporate the ideas and opinions of teachers and staff included:

- All-staff trainings when farm to early care and education programs partnered with a new school.
- Use program activities to meet professional and educational competencies for both children and staff.
- Frequently request feedback from teachers and staff on program implementation.

7. Incorporate consistent feedback and self-assessment as programs are implemented ^{33,34,35,37,38}

Incorporation of feedback from a variety of stakeholders was consistently defined by programs as a way to best fit the evolving needs of the childcare center, staff, parents, and the greater community. One evaluation strategy that was successful in several organizations was the Nutrition and Physical Activity Self-Assessment for Child Care³⁷. This evaluation tool provides organizations with self-assessment tools for nutrition and physical activity.

8. Use the barriers programs face to inform potential policy changes at the city and state level³⁷

One organization was focused on pushing for policies that incentivized farm to early care and education programs.³⁷ The main proposed policy change was to incorporate farm to early care and education programs as methods of Early Childhood Environmental Rating Scale ratings and Child and Adult Care Food Program reimbursement. One way to push for changes like this is to keep track of the barriers and challenges faced by the childcare center and the farm to early care and education organizations and use them to inform policy.

4.1.5 What would programs do if they had a lot of funding and resources?

When asked about budget allocation given ample funding and resources, some programs indicated they would spend more time assessing community needs.^{33,36} One organization would like to focus

more on providing culturally diverse food options.³⁵ Another organization would put money into policy change efforts to increase state funding for farm to early care and education programs.³⁷

4.2 TRADITIONAL LITERATURE REVIEW

4.2.1 The social economic, and health impacts of farm to early care and education

There were four key impacts of farm to early care and education found throughout the literature:

1. An increased awareness and understanding of food among children, and more willingness to try new foods

Many centers participating in farm to early care and education exposed children to environments that emphasized trying new foods and understanding food origins. Studies found that exposure to farming and gardening environments were associated with: (1) Expanded child knowledge and recognition of the different types of food and (2) Where foods come from.^{11,12,14,15,16,17,22,26} Qualitative interview data from an experimental study showed an association between farm activity exposure and child knowledge of how and where food is produced.¹⁴ Additionally, a quasi-experimental study also showed improvements in fruit and vegetable recognition (using card games) after a physical activity and nutrition education intervention.²²

Repeat taste testings were associated with increased liking and willingness to try new fruits and vegetables.^{16,18,19} Randomized control and experimental trials have illustrated the use of repeat tastings for increasing acceptance of previously disliked vegetables.^{16,18} Researchers discovered that the children increased their preference for vegetables targeted with repeated taste tests compared to non-targeted vegetables.¹⁸ Willingness to try new foods was also influenced by nutrition education and gardening exposure; a quasi-experimental study found that children who participated in both of these activities were more willing to try new fruits and vegetables compared to controls, while nutrition education alone increased willingness at a lower magnitude.¹⁶

2. Improvements in diet quality, specifically focusing on fruits and vegetable consumption

Much of the literature mentioned programs' intent to improve diet quality. A meta-analysis reported that 10 of 15 observed studies reported positive dietary changes when fruits and vegetables were served in schools.¹⁷ One randomized control trial found that those who received free fruit and vegetable snacks in school in addition to nutrition education ate significantly more fresh produce than controls. Notably, this consumption increase was not significant for those who solely received free produce snacks.³⁹ Another randomized control trial concluded that carotenoid improvement scores, a measure for diet quality, were highest among children who received nutrition education.⁴⁰ These studies in tandem show the importance of education in improving child produce intake .

There were several studies that employed other tactics to improve child diet quality and fresh produce intake. These included offering fresh produce options to families at pickup,¹⁰ and engaging children in hands-on activities like food preparation and gardening.^{11,12,13} Additionally, one study found improved nutrient content within meals provided by a Farm to School program compared to standard Head Start meals. This study illustrated the potential for farm to early care and education initiatives to positively impact diet quality.

3. Formation of relationships between families, educators, farmers, and the wider community

It is crucial to recognize the key role that different stakeholders play in farm to early care and education programming. The literature suggests that involving stakeholders in program planning and evaluative procedures²⁰ establishing clear communication between these stakeholders is key to establishing strong and impactful curriculum and efficiency in farm to early care and education programming.^{17,19,21}

4. Advancement in economic opportunity for farmers

Partnerships between early care and education centers and farmers introduce the potential for economic growth, both for the local agricultural system and farmers themselves.^{9,19} A meta-analysis mentioned that many farmers were enthusiastic about partnering with early care and education centers despite low profit from these centers.¹⁷ The profitability of farm to early care and education for farmers has not been thoroughly researched.²¹

4.2.2 Program challenges and barriers, and potential solutions

Farm to early care and education programs face an array of challenges that influence their success and many of these challenges have evidence-based solutions. There were seven key challenges faced by the organizations throughout the literature, and the data is organized by challenge and their accompanying potential solutions.

Challenge 1: Lack of Resources^{9,11,12,13,14,16,17,18,19,20,21,24,26,27,28}

Many of the programs implementing farm to early care and education programming had insufficient resources to carry out these tasks. A lack of funding, the most commonly reported challenge in the National Farm to School 2018 survey⁹, as well as time, labor, training, and knowledge of farm to early care and education topics among early care and education staff were widely reported as interfering factors to program implementation.

Solutions:

Time and Labor:

Programs reduced the burden of time and labor constraints in several ways. Using pre-planned, specific, evidence-based programming was one way to relieve the responsibilities of the early care and education sites.^{20,26,27,29} Izumi et al. highlighted this in their discussion of Harvest for Healthy Kids, a nutrition education curriculum based on the social cognitive model that incorporated teacher feedback to ensure classroom feasibility.^{20,26,30} Harvest for Healthy Kids illustrated the benefit of collecting feedback in the program planning phase. After program implementation, the teachers saw the curriculum as reliable and useful in the classroom.³⁰ Incorporating teacher feedback in the program planning stage revealed potential knowledge gaps that should be addressed in order to deliver content to non-nutrition professionals.^{20,26,30} Additionally, providing materials such as kitchen utensils and picture cards at the start of the program reduced the amount of time teachers and administrators contributed to farm to early care and education, which required structural changes within schools to ensure preparedness.^{13,20,26,27} Using an established curriculum

saved time, standardized the common values/education between centers, and improved feasibility.

Training and Knowledge:

Teacher and early care and education staff training procedures must be addressed to reduce the resource barriers of early care and education centers.¹⁶ Incorporating farm to early care and education into existing training requirements in addition to instilling knowledge about the local food system,¹⁹ were ways to reduce the burden of time associated with programming.^{9,30} Repeat trainings³⁰ and increasing the number of people within a facility who are trained for farm to early care and education was also beneficial for ensuring preparedness and knowledge of the topics being presented to children. One article discussed how a registered dietitian (RD) hosted a larger training for teachers, assistant teachers, cafeteria staff, and family service workers within a Head Start facility on some of the activities and trip facilitation that would be required for the curriculum.²² Generally, RDs were mentioned as key resources for guidance and advocacy of farm-to-early care and education.^{20,22,24,25,27} RD knowledge on healthy diets and physical activity could benefit early care and education centers by ensuring that the meals and snacks being served to kids meet nutritional needs, and that education methods are evidence-based and effective.^{24,25} The second strategy was successful in relaying knowledge to the early care and education centers in the case of one nutrition education program for low-income children.²⁵ Reliance on other professionals such as master gardeners or Cooperative Extension could also assist with gardening support.^{9,21}

Funding:

While funding is the most commonly reported burden according to the National Farm to School Network 2018 survey (67.7% of farm to early care and education providers reported limited funding for supplies as a barrier), this burden has very few solutions. Systems-level change is required to alleviate this problem, and there were several ideas provided in the literature. The Center for Child and Family Policy at Duke University suggested creative ways to reduce the cost of fresh produce. These strategies include buying surplus crops from farmers typically offered at a lower price, using gleaned crops, or pooling buying power with other childcare facilities to afford more fruits and vegetables.¹⁵ The Academy of Nutrition and Dietetics also recommends the use of canned vegetables to promote healthy eating among children if fresh items are unavailable or out of season.²⁴

Challenge 2: Child and family program participation and engagement ^{9,10,11,12,13,16,18,19,22,23,24,25}

Much of the research mentioned the difficulty of reaching both the children and parents through farm to early care and education programming. While the children were physically present in the classroom for these activities, their level of enthusiasm varied from program to program. Furthermore, maintaining child interest was dependent on the nature of the curriculum. Connecting with parents was also challenging for programs; limited communication and scheduling constraints, among other factors, restricted the extent of parent involvement necessary to reinforce the behaviors at home that programs were hoping to instill in the children.

Solutions:

Child Involvement:

Having multiple hands-on activities incorporated into farm to early care and education lessons revealed immense successes for child engagement. Positive outcomes such as child participation and willingness to try foods emerged from intentionally using curriculum that met educational guidelines^{15,20,26} and was age-appropriate.^{12,16} Active learning experiences that involved hands-on activities like food sampling and food preparation, as well as songs, short stories, or physical activity, have all been echoed throughout the literature as essential ways to target child engagement and learning.^{11,16,19,20,22,26,27} After implementation of a fun and active nutrition education program called Color Me Healthy, 96.6% of kids within a Head Start facility reported being “happy” or “very happy” with the program.²² Children in this program also showed significant improvements in fruit and vegetable recognition.²²

Some articles suggested the potential for incorporating farmers into educational programming as guest speakers or through farm visits to further engage children.^{17,19} In addition, focus groups with parents and teachers after a garden-based intervention in a Head Start facility revealed excitement among the children about the activities, with 100% of the teachers reporting support for the program and that the students enjoyed learning the content.¹¹

Parent Involvement:

Connecting with parents was a common issue for farm to early care and education programs. Parents serve as role models and food providers for children in the home and therefore are crucial players in the farm to early care and education movement.^{9,22,24} Yet, there is evidence that parents may often lack health knowledge.²⁴ The Academy of Nutrition and Dietetics addressed this through a five week initiative called Lunch is in the Bag. This initiative demonstrated that parent-directed training improved nutritional quality of sack lunches packed at home.²⁴ Empowering parents with knowledge and giving them a sense of belonging allow them to be advocates for farm to early care and education programs and their own child’s eating behaviors.^{19,24}

Involving parents in multiple ways that acknowledge their needs and schedules can help keep parents informed about farm to early care and education activities. The use of multiple communication methods was most effective because it provided more opportunities to reach and inform parents about farm to early care and education programming, and a higher likelihood of healthy behavior reinforcement at home.^{10,19,22,23,25} In their evaluation of a nutrition education program at a low-income school, Williams et al. specifically concluded that a lack of parental exposure to farm to early care and education programming inhibited the establishment of healthier practices at home.²⁵ Williams et al. observed that offering classes and take-home materials to children and parents resulted in increased parent engagement (12% of parents attended classes, 86% read at least some of the newsletters) and increased at-home vegetable consumption.²⁵ Carroll et al. found that providing produce and recipe cards at a frequented location (such as the early care and education center) and having fresh vegetable orders available at pickup elicited positive feedback from parents and children, and also improved intake habits at home.¹⁰ Taste-testing, farmer’s market

setups at pick-up, and community gardening activities were also used to engage parents and children together.^{9,10,23}

Challenge 3: Seasonality ^{9,10,12,13,19,23}

Depending on the region and type of program, availability of produce due to climate and seasonality is perceived as a barrier to the success of farm to early care and education programs. Many of the fruits and vegetables specifically desired by kids and families are not available throughout the school year due to seasonal constraints.

Solutions

While seasonality cannot be changed, there are several suggestions that have been presented throughout the literature to adapt. Education about seasonal availability and local food systems for staff, parents and children was one suggestion to clarify why highly desired crops may not always be present.^{9,19,23} The National Farm to School Network indicate that using facilities and storage techniques that extend availability of seasonal produce and investing in local foods that are available year round such as meats, grains, legumes are viable ways of addressing seasonality.⁹ They also mention the potential for farmer greenhouse construction and maintenance in the colder months if the proper funding and resources were allocated.⁹

Challenge 4: Structural barriers ^{9,15,19,20,21,24,26,28,}

There are systemic barriers that occlude progress for farm to early care and education programs, including a lack of system-wide investment in farm to early care and education or favorable health policies. In many states, this results in minimal regulation and incentivization of farm to early care and education at the state level.

Solutions

While these structural barriers cannot be completely eliminated, there are measures that can be taken to promote incorporation of local produce into childcare centers. One proposed strategy includes a push for more legislation that require more fruits and vegetables to be served in early care and education centers that come from local farms.¹⁵ Some states have adopted strategies to incentivize farm to early care and education programs by using activities such as gardening and taste tests as a way for centers to improve quality ratings.⁹ Policies that reduced liability concerns that may arise in farm to early care and education partnerships ,especially those related to food donations, would make farm to early care and education more attractive to adopt into curriculums.¹⁵ Additionally, the National Farm to School Network created a racial and social equity tool to evaluate how programs are addressing and acting to resolve these issues in their quest for equity.³¹ This tool could be utilized by child care centers to check on their progress in this area.

Challenge 5: Neophobia ^{13,16,18,19,22}

Children often express a lack of enthusiasm or willingness to try certain food items, especially fresh fruits and vegetables.

Solutions:

Repeated exposure to fruits and vegetables in farm to early care and education settings revealed positive results in child willingness to try new foods and consume them more

regularly.^{13,18,19,20} Incorporating taste tests into farm to early care and education programming was a successful way to provide this repeat exposure. Berkenkamp and Mader from the Institute for Agriculture and Trade Policy specified that 6-10 exposures to an individual food can affect taste preference.¹⁹ Maxwell et al. highlighted this in practice through a YMCA program that targeted five key vegetables that the children disliked at baseline for taste testing. Over a four-week period of daily tastings, the children reported increased average liking of the target vegetables.¹⁸

Additionally, rewards have been found as a successful tactic for combatting neophobia among kids as they provide incentive to try the new items and distracts from peer influence.¹⁸ Having the teachers act as role models by trying the foods alongside the children also helped with willingness to consume.^{13,20,28,29} Involvement in gardening also coincided with increased vegetable intake patterns;^{12,16} one garden-based pilot study specifically noted that children were more likely to consume vegetables put on their plates compared to those without the gardening experience, and they were more open to consuming vegetables overall.¹²

Challenge 6: Procurement ^{9,10,13,19,20,23,26,29,30}

Procurement of local produce comes with logistical issues, such as ensuring the reliability, timing, and accuracy of product orders and deliveries. Food waste was an issue for some centers, as the quality, quantity, and usefulness of produce varied. The level of economic opportunity for farmers was also a challenge in the literature.

Solutions

Early care and education centers vary immensely in their size and capacity for incoming products. Therefore, solutions for procurement-related issues must be tailored to each individual site.¹⁹ Many early care and education centers were not able to use and process large quantities of produce due to facility constraints and smaller child enrollment numbers. It was recommended that these sites should attempt to partner with smaller-level farmers while larger or multi-location centers can partner with distributors who source from larger-scale farms.^{9,19,21} Investment in facilities that will allow for long-term storage and processing of the produce in early care and education sites may be worthwhile for centers to incorporate, as they'll then have an increased capacity for incoming items and thereby reduce food waste.¹³ For smaller facilities, being strategic about procurement is another option to alleviate food waste and overcapacity. Some ideas presented were trying community supported agriculture (CSA), farm share memberships,^{9,15,19,23} farmers markets, or grocery stores to get produce and reduce delivery-related burdens.^{21,23}

Smaller farms and new farmers could partner with smaller child care centers to provide produce that meets farmer supply and center demand.^{19,21,27} Additionally, mobilizing resources, such as liaisons associated with the National Farm to School Network or websites that list farmers by geographic area, could streamline farmer matching to an appropriate child care center.⁹ Pooling buying power by partnering with K-12 districts could be another way to allow for larger food purchases and improve upon profitability for larger farmers.⁹

^{15,20,23,}

Challenge 7: Stakeholder communication ^{9,13,19,21,29}

There are many players involved in the local food procurement piece of the farm to early care and education movement, including farmers, distributors, early care and education staff, and educators. There is often administrative communication that is lacking in these partnerships, and programs commonly reported confusion and unreliable communication between groups.

Solutions:

While there were few well-supported solutions for improving communication presented in the literature, the most common suggestion for improvement in this area was to prioritize building relationships between stakeholders.^{17,19,21} Inviting farmers as guest speakers or bringing children to the farm is one presented way to engage with and include the farmer in the cause; this would introduce an educational opportunity to the children while also strengthening program ties with the farmer.^{13,17,19} Several studies also highlighted the importance of drawing on all stakeholders to establish clear methods of communication and responsibilities between parties, as this would reduce confusion related to procurement issues.^{29 19,20,26}

4.3 LITERATURE RESULTS DISCUSSION

There are several themes that were present in both the traditional literature review and in our interviews with other programs. Below we present these overarching, common themes as ‘What We Know’ and ‘What We Don’t Know’ about farm to early care and education programs.

What We Know**1. Interactive-hands on curriculum helps promote child buy-in into farm to early care and education programs.**

There is ample evidence from peer-reviewed and grey literature indicating that the use of taste tests, gardening activities, read-alongs, songs, guided cooking classes, and lessons involving physical activity encourage child participation, engagement, and learning.^{11,16,19,20,22,26,27} This evidence is supported by observational evidence from four of the seven organizations interviewed ^{33,34,36,38}

2. Parent involvement is crucial to the success of farm to early care and education programs.

Informing parents about the farm to early care and education curriculum in multiple ways has impacted the success of farm to early care and education programs. Williams et al. addressed the disconnect introduced when parents are not taught about farm to early care and education programs, preventing children from establishing healthy practices at home. The importance of parent engagement was supported by two of the seven programs, adding another layer that cultural differences could widen the parent engagement gap. ^{32,35} Parent involvement has been successful through passive communication (newsletters, emails, texts) and active communication (presentations at family nights, parent-child cooking classes, parent taste tests, parent farm to early care and education orientations, family gardening activities).

3. Lack of resources is a significant challenge faced by farm to early care and education programs that have a variety of potential solutions.

A lack of funding, time, labor, training, and knowledge of farm to early care and education topics among staff were highly reported as challenges faced in the 2018 National Farm to School Network survey with several articles substantiating this idea.^{13,14,17,19,21,26,27} This challenge was also echoed in six of the seven programs interviewed. Some solutions mentioned in both literature and interviews included using curricula that were assessed and evaluated by teachers,^{9,20,26,27,29,35} and ensuring farm to school curriculum meets educational requirements for teachers and staff.^{15,20,33,36}

4. Communication between stakeholders involved in farm to early care and education implementation should be clear and consistent.

Stakeholder involvement in all stages of farm to early care and education implementation helped generate sustainable programs that incorporated the needs of everyone. In the literature administrative communication was often lacking for programs,^{13,19,23,26,29} and this sentiment was echoed in several interviews.^{33,37,38} Clear and consistent communication between stakeholders alleviates stress and burden placed on child care centers and fosters program changes that incorporate all voices.^{20,26,33,34,35,37,38}

5. Procurement logistics are site-specific and must be highly adaptable to evolving needs of each site and the needs of farmers.

Food procurement needs have been shown in literature and program interviews to be highly varied with each child care center.^{9,13,23,26} Program interviews further indicated that some centers can choose from many different procurement options but others can only work with large distribution companies.^{37,38} It is important to note that some farmers experienced an economic loss from providing produce to child care centers.²¹ Needs of both parties can be balanced through using a hired farm to early care and education liaison,^{9,14} the use of a variety of procurement methods that incorporate farms of all sizes and grocery stores,¹⁵ and matching farm production capacity with the size/scope of the child care center.¹⁵

6. Structural barriers rooted in policy exist within the farm to early care and education and farm to School networks.

A lack of system-wide investment into and in support for farm to early care and education programs prevents the growth and expansion of these programs throughout the country. This expansion is hindered further by unfavorable policies that do not incentivize farms to early care and education implementation into child care centers.^{9,15} Child and Adult Care Food Program guidelines in particular make implementing farm to early care and education programs challenging because of their strict meal guidelines that allow for fruit juice to replace whole fruit.¹⁵ Program interviews indicated that putting money into fighting for policy changes that incorporate farm to early care and education metrics into Quality Rating and Improvement System star ratings is one way to break down this structural barrier.³⁷ Another method was trying to match offerings of Farm to early care and education programs with Child and Adult Care Food Program guidelines.^{33,37,38}

What We Do Not Know

There are a few ideas present in many farm to early care and education programs that remain unsubstantiated. There are also some clear gaps in the literature that could help direct future metrics recorded by farm to early care and education programs as part of a program evaluation.

Combating chronic disease and childhood obesity was the most frequently cited reason for implementing farm to early care and education programming. **However, there was no evidence to suggest that farm to early care and education programming impacted any markers for chronic disease or obesity.** Very few studies measured markers for chronic disease or obesity in their analyses, and those who did found inconclusive results. One program measured BMI as part of a grant requirement, but they did not analyze for changes post program implementation. By contrast, many studies that measured the willingness for children to try new foods and diet quality found significant increases in willingness to try new foods and diet quality upon program implementation. If impacts on chronic disease and obesity are long term outcomes for farm to early care and education programs, effective measurement for these outcomes should be included in program design. Programs might also consider using eating behavior and diet quality as long-term outcomes.

Seasonality was mentioned as a barrier for farm to early care and education program in the review of traditional literature but was discussed infrequently during program interviews. **Absence of seasonality discussions in program interviews was likely due to the nature of the questions we asked and less so an indication that seasonality was not an issue for these programs.** In future analysis, information on seasonality should be asked in interviews and conversations with other programs.

A clear gap in the literature existed surrounding produce procurement and farmer relationships in farm to early care and education programs. Many early care and education programs strove to incorporate farmer voice into their program and provide a consistent market for local farmers in order to boost farm economy. However, some of the biggest issues cited in the literature were based on procurement and farmer relations. Furthermore, there is very little evidence on causes of this problem and viable solutions. Most of the literature was based on child behavioral change and curriculum design for improved child health outcomes. If building relationships with farmers and economically supporting them is a goal of these programs, more evidence should be produced as to how organizations are achieving this goal.

5 EARLY CARE AND EDUCATION STAFF INTERVIEW RESULTS

We conducted individual phone interviews with nine Seattle early care and education staff members. All centers were participating in the Farm to Table program at the time of interviews, with one yet to complete their first food order with the program. The number of children attending the early care and education centers ranged from 12 to 350 with ages as young as one month old and as old as 13 years. Many centers provided childcare for children predominantly from low socioeconomic status while others had similar enrollment of children from both low and high socioeconomic status. The number of sites of each early care and education center varied with some only having a single location while one had 12. There was also variation in how many meals and snacks were prepared daily at each center. One center used Farm to Table food for curriculum purposes only, but the children did still get to eat this food as a part of the learning activities.

5.1 STAFF PERSPECTIVES ON THE DIMENSIONS OF ‘HEALTHY FOOD’ AND ‘HEALTHY FOOD ACCESS’ IN EARLY CARE AND EDUCATION CENTERS

5.1.1 Definition of ‘healthy food’ and ‘healthy food access’

Early care and education staff identified healthy food as fruits, vegetables, and whole grains while four interviewees specifically mentioned foods that meet the nutrition guidelines of the Child and Adult Care Food Program. Healthy food access was described as exposure to these food groups as well as fresh, local, seasonal food served with meals and snacks that children would not normally try. In addition, access was defined as learning about healthy food through activities and curriculum provided by early care and education centers.

“Part of our curriculum is that we have kids eat and try stuff, so for example on the days we have lentils, there’s a whole topic or curriculum about beans and how they’re healthy and this is one version of it, and of course, come lunch, they were a favorite.” - Staff member 014

5.1.2 The culture of preparing, eating, and serving fresh fruits and vegetables

The culture of preparing fresh food at the early care and education centers is best described as rushed and overextended. Two-thirds of interviewees mentioned relying on Costco for next day delivery. Many also cited the difficulty of having staff time dedicated to cooking in addition to lack of cooking staff and staff overall. When asked what meals they would ideally like to serve, early care and education center staff listed complex meals that provided variety like barbeque chicken, pasta primavera, and Thai food. They stated, however, that these ideal meals are currently unable to be achieved due to these same time and staffing constraints. Staffing was listed as an issue particularly because one person has to prepare and cook the food, and another has to clean and these duties pull staff out of interacting with and supervising the children for a considerable amount of time. Staff also lacked cooking tools and skills as well as confidence in the kitchen. Accommodating Child and Adult Care Food Program guidelines was also mentioned as a contributing factor to the stressful environment of serving fresh fruits and vegetables.

“We get funded by a government grant, called CACFP and have to jump through lots of hoops to make sure you’re doing what they want.” -Staff member 001

From the food access aspect of eating fresh food, early care and education staff wanted to make sure the children are getting something to eat as they may be experiencing food insecurity at home.

“A lot of [the kids] rely on school lunches too and I want them to be happily fed if they go home and there’s not much for dinner that day. It’s not always that desperate, but you don’t know when it is.” -Staff member 004

5.1.3 Perceptions of serving local foods to children and its importance

Early care and education staff members provided a fairly balanced distribution of reasons for how important it is that foods served at their centers are locally and sustainably grown. Three staff members stated serving local foods are important because it exposes children to foods they might not eat at home.

“[Serving local foods to children is] very important - we have many low-income families. When we provide them organic and healthy foods, they really appreciate it. When we talk about Farm to Table, they like the program and the benefits.” -Staff member 012

“The kids get to see different fruits and vegetables even if they may not be perfect. Or just get to experience the whole thing...the kids can eat something at school that they might not eat at home, and they can take it home to share it with their families. Now [with the Farm to Table program] that child has that experience [with new fruits and vegetables] and can share it.” -Staff member 015

Knowing local food is pesticide-free, knowing where the food comes from, and helping farmers were all cited twice by staff as being reasons they felt it was important to serve local, sustainably grown food to children. One staff member thought it was important to serve local foods to children but purchasing cost would prevent them from doing so if their center did not participate in Farm to Table.

“Ideologically, quite important [to have local food options]. Practically, not as important. If we did not have this grant through Farm to Table, I would not be seeking out this quality of food since we would not have the budget to support it.” -Staff member 016

5.1.4 Barriers to accessing and serving fresh foods

Menu planning was a major barrier mentioned by early care and education center staff to cooking and serving fresh fruits and vegetables. Of the nine interviewees, six mentioned seasonality of ingredients, five mentioned storage capacity, four mentioned time to prepare food, and four mentioned using food before it spoils as barriers to incorporating fresh, local foods into their menus.

“Menu planning [makes it difficult to serve fresh foods] because you don’t know what will be offered from Farm to Table more than a week in advance because you order throughout the week and it comes to you on Tuesdays. If what you plan in your menu is not reflected or something along those lines...that can be frustrating.” -Staff member 016

“It’s pretty hard to store pounds and pounds of lettuce...It does come in bulk and we do have to order so much of it. The issue of having to spend \$100 on one thing it either sits

on the table or takes up the whole freezer. Two hardest things are storing it and planning to cook it.” -Staff member 004

“...some of our programs have space to cook, and some of them - they don’t have very adequate pots and pans, tools, to prepare food. If we have a smaller program, time for our cooks to be able to prepare everything [makes it difficult to serve fresh foods].” - Staff member 002

Other barriers mentioned were getting children to eat new foods, staffing shortage, lack of cooking equipment, meeting Child and Adult Care Food Program guidelines, and disconnect between staff who order the food and those who prepare it.

5.1.5 Early care and education center activities and supports needed from the Farm to Table program

Seven of the nine early care and education center staff members reported that Farm to Table needs to establish itself in a consistent and clear manner to center staff and through marketing to schools and television advertisements. Four staff members reported a desire for farm outreach to either bring more farmers from the Farm to Table program to visit their centers or to create an established system for field trip plans. A lack of information and timely planning of field trips by Farm to Table was also mentioned by multiple staff. One interviewee offered the suggestion that foods delivered from Farm to Table should contain preparation instructions, information about the food, and information about Farm to Table. Five staff members explicitly expressed desire to have recipe cards that come with the produce, suggestions for seasonal recipes, or training for cooking staff on how to cook adequate amounts of foods from Farm to Table as forms of support needed from Farm to Table.

“I really love what [Farm to Table] has available. What I would like to have more of is not food, but if they could provide more recipes on how to use the foods that they have available, that would be great because there are some [foods] that I have never heard of and don’t know how to serve.” -Staff member 016

“Training people how to cook [would help address the challenge of preparing food] if people had more knowledge about how to whip up a stir fry with local veggies, how to use kohlrabi, then I think...having a training day [with Farm to Table] and tasting the delicious things made with [foods from the program], that would change the game.” - Staff member 001

5.1.6 Early care and education staff believe the Farm to Table program should leverage participation of specific community organizations:

Early care and education center staff identified Seattle Parks and Recreation as an organization for Farm to Table to work with, particularly during the Children and Youth Summer Food Service Program. They expressed this would increase program outreach beyond children in Seattle who only attend early care and education centers during the school year. Staff also suggested to work with Seattle Public Schools and possibly expand the age range of children Farm to Table serves. This was strongly recommended by staff at centers that have preschoolers who Farm to Table is already reaching alongside school age children they are not. Other organizations mentioned for

Farm to Table to work with were senior centers and restaurants, but it was not indicated what these relationships would look like.

5.2 MEASURABLE OBJECTIVES IDENTIFIED BY EARLY CARE AND EDUCATION STAFF TO GUIDE THE FARM TO TABLE PROGRAM DESIGN

5.2.1 Definition of 'success' for the Farm to Table program:

Overall, early care and education staff defined success for the Farm to Table program as exposing children to fresh food. Seven staff members suggested more knowledge about different foods and public knowledge of the program.

"I think, for me personally, it would be more well known. Before I came to childcare and worked with food, and the menu, and you know the nutrition of the children, I wasn't aware of this program - so I think one that you know, I don't know if it'd be out there it'd be more well known. And if it's part of Seattle Public Schools, like they'd know that's where their food and produce comes from." -Staff member 014

Additionally, five staff members reported that the success for the Farm to Table program looks like expansion into neighborhoods and communities.

"...I'm not sure if [Farm to Table serves] other communities or just Seattle. I live in [a suburb] so I'm not sure if it's offered out there. I'm not sure if [Farm to Table] would be able to deal with them out there. There's more people in this state other than the city of Seattle." -Staff member 009

Three interviewees reported more knowledge for staff about fresh foods as being indicative of program success. One staff member noted data on potentially positive health outcomes of children in the Farm to Table program would be a marker of program success.

5.2.2 Outcomes and goals early care and education center staff would like to see the Farm to Table Program achieve

Early care and education center staff unanimously agreed with the current goals of the Farm to Table Program and did not suggest any additional goals for the program to achieve.

5.2.3 Challenges to participating in the Farm to Table program:

Early care and education staff members overwhelmingly indicated they do not know enough about the Farm to Table program nor its goals. Eight of the nine interviewees learned about the program after they stepped into a role for which they were responsible for the Farm to Table ordering and organization within their site. There is not a general knowledge or understanding of the Farm to Table program at the centers.

"I would say, probably [a challenge to participating is] just the knowledge and knowing how to get started. You know, it kind of might sound overwhelming, or [you] don't know [how to] access [Farm to Table]." -Staff member 002

There have also been challenges with the additional services provided by the program.

"Last year [one of Farm to Table's partner programs] came out and did some lessons and tried to correlate with curriculum and they wanted to do one hour lessons and

that was, I don't know if it's because of government funding or what but for preschoolers, a one hour lesson is not good. Even a half hour is very, very long. That's the only thing I had issues with." -Staff member 013

5.2.4 Early care and education centers align with the values of the Farm to Table program:

When read the list of Farm to Table values, all early care and education staff agreed with these principles and stated they align with their experience with the program. Three staff members expressed a desire for these values to be made more visible to staff and children.

"...that's my first time hearing the values. I think...it would be probably a beautiful thing to see those values somewhere when [the food] is coming in so that when I'm giving it to a site they can actually see [them] - I think hearing those values will change their respect for that food as they're preparing it too. I never even knew that those were the values [of the program] ...it would be beautiful to see those." -Staff member 002

"I've heard them before and a few of them surprised me because I haven't seen them played out. But narrowing in on some of them - honoring the land, educating families, resilient practices - I haven't seen that, but it certainly doesn't mean they are not doing it, but the way that it is getting communicated to partners there might just be a disconnect there." -Staff member 016

"If someone [from Farm to Table] could explain them more, not everyone can see them. [That] would be awesome." -Staff member 015

From the list of Farm to Table values, the ones most mentioned by staff members as being their top values were health equity (5 out of 9), honoring the land our food comes from (4 out of 9), and access to quality food (4 out of 9).

"...the honoring of the land [food] comes from, I wouldn't have even thought of that until you said it. I'm like - oh my gosh...it's important to know that the food comes from the land you know, but that's such a beautiful value - I'm actually moved by it, I'm like, 'Oh that's so beautiful.' And the culture, I think the culture, you know having the different types of foods and the different ways to do it, you know I think that's where providing the different ways that the foods can be prepared or used or stored would be a way to honor that diversity and respect for the food...it's almost healing in social justice - like you know I'm very big on social justice and equity and accountability and that is such a way to tie it to the food - like food connects us all you know, like usually when you think of different cultures - like what kind of food do they eat? Or what kind of music do they listen to?" -Staff member 002

"[A top value is] honoring the land, which will go into quality and community. If we are just growing and no one is experiencing it, it's not going to work if we don't put it out there." -Staff member 015

6 FAMILY AND PARENT INTERVIEW RESULTS:

In this study, we interviewed 7 parents with children that attend early care and education centers in the Seattle area (Tiny Tots, ReWa Lake City Early Learning Center, Launch Miller Annex and ARC Northgate). Each parent had at least one child that attended the early care and education centers and some families had multiple children. There was no income requirement for participation, so families that were interviewed may have represented a variety of socioeconomic status. However, the primary targets for this study were families of lower socioeconomic status that are most affected by the Seattle Sugary Beverage Tax.

6.1 UNDERSTANDING DIMENSIONS OF ‘HEALTHY FOOD’ AND ‘HEALTHY FOOD ACCESS’ FROM THE PERSPECTIVES OF THE PARENTS

6.1.1 Parents’ definition of healthy food and healthy food access:

The parents defined healthy food as being varied, diverse, energizing, nourishing, balanced, and an experience that involves engaging the person that is eating the food. All of the parents understood the importance of healthy food and seek to provide these foods for their children. The definition of healthy food went beyond the typical ‘fruit’ and ‘vegetables’. Two parents included protein and dairy as part of their definition of healthy food. Parents primarily wanted their children to get nourishment and enough energy from the food they eat at the early care and education centers. Parents mentioned that food was an energy source for their children throughout the day and emphasized food’s importance in supporting their children’s growth and development. In addition, one parent defined healthy food as balanced and keeping the children engaged.

“I would like them to be eating healthy. Maybe some water and milk with some protein, vegetables, and fruits.” (005).

“I just want them to be healthy and they get what they need because their bodies like [my child] struggling with weight. It’s important that he gets enough protein to grow.” (007)

The ideal menu would provide “energy and protein to keep him going through the day. I like to keep things within the rainbow if possible. Healthy. Getting fiber, vitamins, minerals, and they are fantastic for your body and keep you going.” (006)

“Gives them a balance of a little bit of everything which helps with brain development. Once you have their [the kids’] input, that’s already going to bring more success because you know what piques the kids’ interest.” (003)

6.1.2 Culture of eating at home:

The families that participated in this study described having at least one parent that prepared and served their children meals and snacks at home. The children seemed to have consistent daily meal schedules that aligned with the parents’ schedules. All the parents interviewed incorporated some fruit into each meal or snack (at least once a day), but vegetables and unfamiliar food to the children and parent were harder to incorporate. Parents raised a couple of challenges to providing their children with vegetables. First, some parents noted that they felt unsure of their ability to cook

vegetables in a safe and palatable way. Two parents commented on altering the preparation of the fresh foods from what they grew up with and to match the preference of their child. One parent commented on their own upbringing and changing the way they cook their vegetables to bring out the natural taste of the vegetables. Parents said that cooking vegetables was a challenge in the beginning as they adjusted their own taste for vegetables and their children's palette as well. Second, several parents commented about their child not eating the fruit or vegetable because they are picky eaters and hesitant to taste foods that appear unfamiliar. The parents interviewed have some control over the taste of the fruits and vegetables to match the preferences of their child at home. However, parents worry that outside of the home, their children may not eat what is offered if the food does not match their preferences or the components are unfamiliar. One parent voiced their concern that their child is not eating at the early care and education centers because they are not familiar with the food provided.

"I stopped putting sugar in them and use regular salt and pepper (not much), so they get the full effect of the flavor of how things really taste like green beans, corn, peas." (010).

"He doesn't like things that are spicy or are too tart; strawberries or blueberries – if he tastes them without added sugar he doesn't like them (they usually end up inside pancakes)." (005)

"Because he's already familiar with it and feels safe eating it. He's a picky eater and it's very hard for him to try new things. I know that if he doesn't want to eat it in 15 minutes, his plate is gone and then he didn't eat." (005)

The challenge would be getting them to eat it because I am trying to be healthier in my house than we normally do. (010)

"My daughter used to eat everything, just like my son does right now, and now she won't eat mushrooms and I don't know if it's because her taste is changing (like her palette is actually changing because I know that can happen) or if it's like preschool pressure like other kids saying 'I don't like mushrooms' and her jumping on the bandwagon" (011)

6.1.3 Parents' perception of local food:

All parents had a positive association with serving local food, but ultimately it was not a driving factor of their eating habits. Four parents commented on the importance of eating local. Three of those four parents mentioned that other factors, such as cost, outweighed the importance of buying local. Parents often mistook 'local' with 'organic' and 'pesticide free'. Under that misconception, one of the main values of local foods from their perspective was that it was organic and pesticide free. Alternatively, some of the parents mentioned wanting to support local farmers and their businesses as the main reason they supported buying local. When the parents were told the list of values of the Farm to Table program, almost all of them responded that "appreciation for farm workers" were in their top three values. Altogether, the parents appreciated the idea of buying local to support the community, but there was still some miscommunication and barriers that make it difficult to buy local.

"I know where it's coming from the most part, I know it's supporting the local economy, and it's a lot easier to be more transparent with agricultural practices when you're within a 100 mi of the people you're getting the food for versus on the other side of the country of the planet, so that's kind of the big part for us." (017)

"If there's no money involved, it's super important, but on the other hand if it's not free, I might have to make some compromises, or like some things are not available locally and we really want/need them; other things are too expensive to buy." (005)

"It is important to me and I appreciate when it happens, but I understand how it can be challenging at the school based on budget. I won't be too concerned if the school has to go outside of locally grown, but I prefer those items if possible." (006)

"Support the community and it's fresh usually" (007)

"The chemicals and the different viruses that people are catching from people eating food that's been grown, it is a lot." (010)

"No preservatives. You don't have to worry about anything being in the food that will take away from the food." (003)

"Getting stuff locally is always better than getting something that may have preservatives that came from a factory. We know that we take care of our land." (003)

"Just so it is not all giant big farms and the little people can keep surviving, i mean not little people, but the small farms can keep surviving" (011)

6.1.4 Barriers to accessing local and fresh foods:

Parents mentioned three key barriers to accessing and serving local and fresh foods that were cost, seasonality, and time. The biggest barrier to eating local food was the cost associated with eating fresh and local food. Another large barrier to accessing fresh, local foods was the seasonality and limitations to increasing the diversity within the diet. Four parents mentioned that the fruits and vegetables that their children favor are not grown in the area and climate, so eating local would limit their options. Lastly, the time to prepare and serve the food to their kids was presented as a barrier to many parents. Some of the families interviewed had more than one child and are the only parent in the household. This limited the parents on how much time they could dedicate to preparing fresh foods for their children and is mentioned by three parents. Overall the parents understood the importance of eating local and fresh food, but these three barriers made it difficult to always buy local.

"Sometimes it's cost. While I want to support locally grown farmers, sometimes it's just hard to supplement that cost within our budget." (006)

"Personally, I really don't care that much, but it is nice. It's one of those things that is a luxury and how much more would I pay for a locally grown thing maybe 10% premium, but beyond that, not much more. I like locally grown and as long as it's not cost-prohibitive, I'm all for it. I like the idea, I support it, I'm glad she's part of a program that's doing it, but if her spinach tomorrow came from Iowa instead of WA I wouldn't be up in a huff about it I guess." (017)

"I haven't had any challenges. I mean I know when the season changes, you just can't always get what you want, so I guess that would be a challenge." (003)

"The seasonality. I know that not everything is grown at the same time." (005)

"Some fruits that we don't have here a lot, like mangos that actually taste sweet or guavas; different fruits that are tropical and not here." (005)

"Honestly the main thing right now in the winter there is not much diversity." "I wish we could eat more, but it's like that diversity thing and I really like avocados and bananas and things that just aren't unfortunately in season here, well, never in season. let alone a lot of the foods that are not in season a lot of the time." (011)

"I'm a single mom of four. Every kid needs their own time with you at some point; there's so many other needs to be met beyond just providing their food." (003)

Preparation time was a challenge in preparing fresh fruits and vegetables. Preparation time was posed as one of the challenges to serving kids vegetables. (011)

"Some things take prep and I may not have the time or ability to do that prep." (006)

6.1.5 How the Farm to Table program can help increase access to fresh, local, and culturally relevant food:

Parents responded that food relevancy to their own culture was not particularly important to introduce to their children at their early care and education center. However, introducing their children to foods of different cultures and increasing their child's awareness around different types of foods was important to parents. There was no single culture that the parents wanted to see represented during meal times at the school, but rather they wanted their children served a diverse choice of food options. This was to also appeal to the children who are picky eaters. While many parents were unable to distinguish between meals provided by the centers alone and the food provided by Farm to Table, the parents were generally pleased with the food that was served at the centers. Parents felt that this was opening some kids up to trying new food at home.

"Having an option that is more universal; something that would appeal to all the kids and then something new/diverse, but not only one options." (005)

"The program he's in does a really nice job already of keeping things pretty balanced and healthy." (006)

"I really like it because all the new stuff he doesn't eat at home, he eats at preschool" (007)

6.1.6 Parents believe Farm to Table Program should leverage participation of specific community organizations:

When prompted to think of community partners that would improve the program, the parents that were interviewed gave three responses: the Hunger Intervention Program, additional school lunch/after/before school programs, and community centers/other relevant gathering places.

Many of the families that were interviewed interacted with or knew of the Hunger Intervention Program through different community events or seeing them tabling at the community centers. Additionally, parents mentioned that the Farm to Table program could take advantage of the abundance of fresh food during the summer farm season and supply the fresh produce to the Hunger Intervention Program. This would reach the children during the off-school times in the summer when they are more in need of food. In addition, many families with older children discussed that they wanted to see the program expanded to serve their older children as well. Lastly, many families mentioned that community centers or other relevant gathering spaces would be ideal locations for Farm to Table program outreach. Parents felt that the community centers would be good places to create connections with community members that are being served by the Farm to Table Program and increase awareness of the program. This would also bring more clarity to the parents who did not know what the program actually does.

“There is already in the city , the HIP, lunch in summer and stuff where people can go and eat. That would be nice because people go for the snack. It’s not really healthy. They get chocolate milk out and stuff and juice, so maybe there you can start, instead of apple juice, you can give out an apple.” (007)

“Having accessibility during breaks and weekends as well, so I don’t know quite where that would fit into this program, but it seems like it would be a very important aspect to it.”(006)

“Maybe set up some booths somewhere and have some explanations about the kind of stuff that you guys are growing. What the produce looks like.” (010)

“I had it misconstrued what the program was, so I think just pushing it and getting the word out.” (003)

“They could do a special outreach and also build up community awareness of their program” (005)

“I guess like you said again more awareness and how to let more people know because honestly i did not know that every school, like when we started this conversation, that all the schools got the food and i’ve been there for two years” (011)

6.2 MEASURABLE OBJECTIVES IDENTIFIED BY PARENT TO GUIDE THE FARM TO TABLE PROGRAM DESIGN

6.2.1 Parents’ definition of successful, equitable and culturally minded food access program:

The parents defined a successful, equitable and culturally minded food access program as offering a variety of food and empowering children with information about the food they eat. The parents mentioned a diversity of options would expose their children to different cultures and new foods. However, the parents were more concerned about having a variety of options, so all children, including picky eaters, could decide what to eat. Three parents specifically mentioned their desire for a variety of food options. Parents explained that having variety would also contribute to empowering the children by allowing the children to make their own choices with the information given about the food they are provided. When children are empowered with choice, it will make them

more excited about the food that they eat. In addition, one parent mentioned that a successful food access program should reach beyond the children and impact the early care and education centers and parents. Engaging all of these stakeholders would lead to happier parents and more successful early care and education centers.

"I get it, they're trying to be diverse for kids who do eat curry; but it'd be nice to have at least one option that everybody will like." (005)

"I just think that if they try all the variety of foods, some exotic foods, that would be cool, so that they can learn what foods you eat in other countries. That would be awesome." (007)

"A diversity of foods and flavors." "Would like all cultures, all flavors to be included." "Just a wide variety of stuff, the more variety the better" (011)

"Once you have their [the kids'] input, that's already going to bring more success because you know what piques the kids' interest." (003)

"I would bring the kids on board maybe, like let them know how important it is to go from the farm to the table." (003)

"Success would be the kids getting fresh fruits/vegetables that are locally grown and getting introduced to new fruits and vegetables; farmers/growers getting supported; childcare centers getting better reviews because they're serving healthy/local foods; and parents are happy because their children are eating well." (005)

6.2.2 Parents' definition of success for the Farm to Table Program:

The parents defined success for the Farm to Table program as increasing kids' access to nutritious and healthy food and using a metric of success to measure children's health and excitement about eating well. Many parents mentioned that their children are more willing to try new food at school than they are at home. Parents mentioned children's willingness to try new food and getting that incorporated at home was one aspect of success for the Farm to Table program. Not only will the children get access to healthy and nutritious food at the early care and education centers, they are bringing that eating behaviour back home, which parents felt could help improve the eating habits of the whole family. Parents felt that incorporating the entire family was essential for the success of the Farm to Table program's long term goals. In addition, having measurable outcomes for the program is something the parents desired to quantify and track the success of the program.

"I really like it because all the new stuff he doesn't eat at home, he eats at preschool" (007)

"[Learning about the program for the first time was] From his teacher. The first time was when they made cauliflower and grilled it. My son won't eat it at home. [The school staff] told us about it and we ate that at home." (007)

"Get kids used to eating certain meals, so that they tell their parents that they enjoy certain meals, and then parents start to make those meals because their kids like them, because kids have a tendency to be very picky, thereby resulting in healthier families all around. That's a good thing." (017)

“Some sort of aggregate analysis looking at overall health trends for kids in some region after exposure to this program.” (017)

“Something...to really incorporate the whole family structure into it would be beneficial to the long term success of it [The Farm to Table Program].”(017)

6.2.3 Desired outcome for the Farm to Table program:

One desired outcome for the Farm to Table program most parents identified is increasing the childrens’ knowledge on not only the different types of food, but where their food comes from. Parents suggested achieving this outcome by increasing child engagement. A couple parents mentioned wanting their children to interact with the food in different forms and at different points along the supply chain, such as seeing the food delivered or picking the food from farms.

“It would be good if the kids could see where it is grown and pick it themselves from a local farm. That would be very nice. So they know where it comes from.” (007)

“How much the kids see the boxes and see the food before it is prepared. How it arrives because i think when you pick up, my kids are always excited when we get a CSA bin to know what’s inside and what is this, so to be able to see what the different things that come and experience the taste” (011)

6.2.4 Parent challenges to participating in the Farm to Table program:

One challenge to participating in the Farm to Table program mentioned by the parents was the overall lack of communication about the program, leading to a lack of knowledge and familiarity surrounding the food being provided for the children. Some parents were concerned that their child is not eating properly when not at home and was mentioned by some parents. In addition, one parent mentioned that if the Farm to Table program were more costly, they would not like the burden of the cost to fall on others in the form of a tax.

Furthermore, another big challenge to participating in the Farm to Table program was the lack of knowledge of the Farm to Table program and how to get involved. All of the parents that were interviewed either confused the Farm to Table program with the Good Food Bags program or had very little knowledge of the Farm to Table program. Parents who received the Good Food Bags enjoy the produce that they take home and spoke positively about the Good Food Bags program. Specifically, they appreciated how the Good Food Bags program increased access to fresh produce and provided the resources to prepare healthy meals at home. Parents were more aware of the Good Food Bags program because the food provided through this program went home with the families and the program provided fliers with their food. One parent mentioned their children’s excitement in bringing the food home and opening up the contents together. Parents were very familiar with the motivations behind the Good Food Bags as they described what the food is for and how they have utilized the Good Food Bags program’s food at home.

Overall, the lack of communication and resulting information gap between the Farm to Table program and the parents were seen as the biggest barrier to participate in this program. Since the parents did not have a clear understanding of what the program does, they did not have a direction they wanted the program to go in. Parents’ suggestions for the program were focused around increasing information, clarification, and outreach to increase awareness of the Farm to Table program and reach more families.

"It's a hand-out, the fresh food bags they receive." (003)

"One day when I picked up my son from school there were stacked boxes with goodie bags and there were little papers with the bags and that was the only introduction I got." (005)

"Having the produce provided to us biweekly started my interest to it. I haven't done a whole lot of research on it, but it's a way for being able to get good fresh, organic produce to people at all kinds of levels, and specifically low income." (006)

"Yes from the preschool, when they brought the fruits and vegetables in and they made a lot of good stuff with it. Otherwise, not really." (007)

"You guys are the ones that bring the produce bags." (010)

"No, but I am thinking it has something to do with the CSA that they get" (011)

Happens through the school once a week, they bring bags of fruits and veggies to the school for each family to take home. Incentive to cook healthy meals at home. (017)

"but it really comes down to cost, right? As much as I like the program, I don't want to be a tax burden on more people to pay higher prices for things just to pay for this program." (017)

"I'll see on their menu they sometimes have curry and he doesn't like spicy foods so I'm wondering if on those days if he's eating anything." (005)

"The one time I did [see him eating a snack at school] it was an orange that wasn't peeled all the way, but he doesn't know how to eat it that way..." (005)

"I don't know what they do for snacks because they don't list what they have." (006)

6.2.5 Alignment with the Farm to Table program:

In its current form, there is a disconnect between what the families reported wanting and the Farm to Table program's current implementation model. Specifically, parents identified a gap in access to food over the weekends and breaks and pointed to the Good Food Bag program as a program they understood and experienced direct benefit from. Parents felt that ultimately the Farm to Table program needed to get the parents involved and excited, which would be necessary for carrying over the Farm to Table lessons to the home.

"I think if they had more support from parents, you could see the effects of your tax dollars at work; cause I was thinking it was a completely different thing [Good Food Bags]." (005)

"They need to involve the parents because at the end of the day the parents will cook it." (007)

"Parents lose track of what is important with daily stuff that is going on, so it's a quick in and out of the facility. But, if they see you guys with information, maybe it will slow them down." (010)

“Any program looking to have a real positive effect on families, it’s important to incorporate the entire family into the message. It’s kind of a lost cause to give a kid a meal and say ‘Hey, this is delicious right?’ without getting the buy in from the parents to be supportive of the healthier choices and making those changes in the house.” (017)

6.3 PARENT INTERVIEW CONCLUSION

The families interviewed for this study valued healthy eating habits and strived to incorporate healthy and fresh food into their children’s meals at home. However, there were several barriers that limited their access to healthy and fresh food, such as cost, time, and availability. At the early care and education centers, parents wanted their children to be served a variety of foods and be empowered to make healthy choices through gaining food and nutrition knowledge. In addition, they wanted the impact of the Farm to Table program to expand beyond the early care and education centers and lead to healthier eating habits at home. Parents expressed that deeper child engagement along the food supply chain will pique their interest and spark excitement about unfamiliar foods that are offered. One of the biggest challenges of participating in the Farm to Table program was the lack of knowledge and communication between the program and the parents. The parents suggested partnering with HIP, community centers and other gathering locations, and providing additional lunch and before/after school programs to spread awareness and increase the reach of the program. Parents wanted their children to be served a variety of food items when eating at the early care and education centers and wanted to know what is being served to their children to ensure they are eating outside of home. Parents defined success for the Farm to Table program as providing nutritious food and engaging the children at the early care and education centers.

Overall, the parents are pleased with the Farm to Table program, but there was some confusion distinguishing this program with the Good Food Bags, which parents reported liking. Therefore, the parents may not be fully aware of the extent of the Farm to Table program and they want concrete outcomes of measure to define how much the Farm to Table program intervention has impacted the children and families served.

7 FINAL RECOMMENDATIONS

In evaluating the Farm to Table program, recommendations were developed to address three primary areas: program goals and outcomes, support for early care and education centers, and parental involvement. The recommendations include both macro and micro-level program changes and vary in the number of resources and the timeline length required for implementation. Our results found that there was minimal awareness and involvement from various early care and education center staff and parents regarding the Farm to Table program. It became clear that the Farm to Table program was being underutilized and in order to maximize utilization, early care and education centers need more support. Although they were participating in the program, most early care and education center staff and parents had misinformation or confusion about the Farm to Table program and suggested increased staff and parent awareness through marketing and advertising. Although parents are not directly impacted by the Farm to Table program, education and awareness is key for families to continue exposing and educating children about healthy foods at home. To enact change effectively, reevaluation of the Farm to Table program intentions, increasing support for early care and education centers, and encouraging parent involvement is necessary in the effort to provide access to local, high-quality food to preschool-aged children.

7.1 PROGRAM INTENTIONS: EVALUATE THE SCOPE, OUTCOMES, AND GOALS OF THE FARM TO TABLE PROGRAM.

7.1.1 Create measurable goals based on staff and parent suggestions.

Use “willingness to try new foods” as a primary goal and key measurement for success. The parents, staff, and evidence from the literature review identified the ‘willingness to try new foods’ as a feasible program outcome. Parents and staff identified this as an important measure of success. Parents mentioned that their children were more likely to try new foods in the early care and education center setting rather than at home. Inclusion of this outcome would allow for evaluation.

Use “diet quality” and “variety of foods” as primary goals and key measurements for success. The parents and early care and education center staff expressed that they were primarily interested in ensuring that the children were receiving proper nutrition at school and being offered a variety of foods. Adding these goals will allow for the program to focus on success measures that are of value to parents and staff members.

7.1.2 Consider expanding the beneficiaries of the Farm to Table program to include older, school-aged children.

Consider including older children into the Farm to Table program. This would address the issue some participating early care and education centers experience with a wide age range of children enrolled in the programs. Parents with children of varying ages also expressed interest in expanding to a larger age range.

7.1.3 Partner with other organizations or expand programming to reach children outside of school hours, on weekends, and during the summer.

Collaborate with other organizations and programs, such as Good Food Bags and the Hunger Intervention Program. Several parents and staff members expressed their concern with children’s access to healthy food outside of school hours (ie. before and after school, on

weekends, school breaks, and during the summer). Parents also expressed their interest in having food from the Farm to Table program sent home with their children to promote healthy eating habits at home. The Farm to Table program could address these needs identified by parents by collaborating with the Good Food Bags and Hunger Intervention Program. Many of the staff members explained that there was a significant amount of food waste from the Farm to Table produce. The partnerships could potentially direct the extra food to children who are in need outside of school hours and lessen food waste.

Partner with other already-established summer programs. Potential programs to collaborate with include: Seattle Public Schools, Summer Playground Programs through Seattle Parks and Recreation, and the Summer Food Service Program, and YMCA summer camps. This would also meet the needs of parents who expressed frustration surrounding produce seasonality in addition to their desire for increased food variety. Taking advantage of the number of options available during summer months would be beneficial to parents. This may also provide a steady stream of revenue for farmers during the summer.

7.2 EARLY CARE AND EDUCATION CENTER SUPPORT: LESSEN THE PROGRAM BURDEN ON EARLY CARE AND EDUCATION CENTERS BY PROVIDING INCREASED LEVELS OF SUPPORT FROM THE FARM TO TABLE PROGRAM.

7.2.1 Develop a more personalized support system so that centers receive the support they need based on their characteristics (e.g. size, kitchen facility, staff capacity, etc.)

Develop a database (or information bank) about the various early care and education centers involved in the program. There is a wide variety of early care and education centers that take part in the Farm to Table program, each with differing characteristics such as enrollment, kitchen logistics, staffing ratios, age range, and Child and Adult Care Food Program compliance. Staff members have expressed their appreciation for the program goals, but are overwhelmed with the amount of required work for participating in the Farm to Table program. Compiling a profile of information would allow for more specialized assistance for each early care and education center.

7.2.2 Personalize the purchasing limit for each early care and education center, through a set dollar amount per child. Not all of the programs use the money or produce specifically for meals and snacks. Some early care and education centers only use the produce for cooking demonstrations and curriculum. Smaller early care and education centers expressed difficulty with reaching the \$100 minimum purchasing limit at one time and larger early care and education centers consistently use their full allotment. Adjustment of the minimum purchase limit could address early care and education center staff concerns about food waste and providing enough for all of the children enrolled.

7.2.3 Hire or appoint one outreach coordinator who is responsible for coordinating all Farm to Table programming (including Solid Ground and Tilth Alliance) with the early care and education centers.

Provide and monitor training for teachers and cooks, organize educational opportunities, and help early care and education centers with trouble-shooting for ordering difficulties. The educational opportunities could include, farm field trips, cooking demonstrations, fresh food curriculum, and assistance with on-site gardens. Various early care and education center staff members expressed the need for training for staff members and cooks for food

preparation, storage, and use of seasonal vegetables. Early care and education center staff members also requested more education opportunities, including meeting the farmers that grow the food. The early care and education center staff members wanted more support with knowing how much produce to order and how to utilize it. An outreach coordinator would be able to support the early care and education center staff members with these challenges.

Serve as liaison between Solid Ground and Tilth Alliance. Many of the early care and education center staff members voiced their need for more support, more frequent engagement, and better communication with Solid Ground and Tilth. Several early care and education centers experienced various communication difficulties, which resulted in minimal involvement from Solid Ground and Tilth Alliance. The staff are very interested in nutrition education and farm trips, so the outreach coordinator could be a liaison between the early care and education centers and Solid Ground and Tilth Alliance.

Adopt a developed curriculum, educational materials, and recipe ideas for distribution to early care and education centers and parents. The early care and education center staff expressed excitement and a positivity towards the potential of the Farm to Table program, but there was a lack of consistent involvement from the education portion. They expressed the desire for more involvement in the form of age-appropriate curriculum, assistance with on-site gardens, and overall outreach and engagement on behalf of Farm to Table. One evaluated and publicly-available curriculum that could be implemented is Harvest for Healthy Kids. The staff also suggested providing recipe cards to follow for preparing foods, and information regarding proper storage and food preservation. The outreach coordinator may provide these additional resources to lessen the burden of curriculum and recipe development on the early care and education centers.

7.2.4 Consider allowing early care and education centers to use Farm to Table funds for farm field trips, nutrition education, gardening resources or kitchen resources in addition to food purchases.

Increase transparency surrounding funding and explore other avenues of potential spending possibilities. Some such areas would include transportation for farm field trips. Two early care and education centers expressed a desire to visit some of the urban farms but lacked the funding to hire a bus. Another possibility could include funding for starting and maintaining on-site gardens or increasing the kitchen equipment necessary for food preparation. Several early care and education centers expressed the lack of basic cooking supplies or space necessary. Allowing early care and education centers to utilize funding for other avenues would increase participation, engagement, and preparation capabilities.

7.2.5 Provide early care and education centers with food preparation support.

Ask food safety certified farmers to minimally prepare produce for early care and education centers prior to delivery (ex. sliced apples). This would have a potential dual benefit as the farmers could increase the price point of the produce, thereby increasing profits. The staff explained preparation time access to proper kitchen tools as main barriers to serving food from the Farm to Table program to the children. This would lessen the burden on the early care and education center staff who would save time by not having to wash and cut all of the produce that is delivered.

Create a centralized kitchen which would distribute and deliver meals to the early care and education centers. The staff expressed barriers, such as minimal kitchen equipment, short staff, and lack of knowledge on how to prepare the produce. This would potentially lessen the burden on the staff members.

7.2.6 Communicate with farmers about specific early care and education center needs.

Work with farmers to offer more value-added foods and highly-requested produce to early care and education centers. Staff members expressed the desire for more value-added items from farmers. The outreach coordinator would also be able to work directly with farmers to accommodate early care and education centers.

7.3 PARENT/GUARDIAN INVOLVEMENT: ESTABLISH PARENT/GUARDIAN INVOLVEMENT WITH THE FARM TO TABLE PROGRAM.

7.3.1 Set-up an online presence, beginning with a Farm to Table website.

Include information about the program, frequently asked questions, contact information, links to partnering organizations, and information regarding events and opportunities. Most of the parents/guardians were unaware of the Farm to Table program and confused it with the Good Food Bag program. The website would provide parents/guardians with a better understanding of program goals and serve as a place to refer parents/guardians to those who have questions.

7.3.2 Design marketing materials for early care and education centers to provide for parents/guardians.

Provide a one-page handout about the Farm to Table program for early care and education centers. This can be provided to parents/guardians with their enrollment materials and would be helpful for increasing parent knowledge. This will help educate parents/guardians about the Farm to Table program and take some of the educational burden off of the staff members.

7.3.3 Plan events to improve parent/guardian awareness of the Farm to Table Program.

Host regular events for families to attend. Events could include: parent/guardian nights at early care and education centers, booths at already established parent nights at the early care and education centers, visits from farmers, and open farm days. Findings from the literature review suggest that engagement with children in the Farm to Table program can serve as marketing and increased program awareness for parents/guardians.

8 REFERENCES

1. Kral TVE, Chittams J, Moore RH. Relationship between Food Insecurity, Child Weight Status, and Parent-Reported Child Eating and Snacking Behaviors HHS Public Access. *J Spec Pediatr Nurs.* 2017;22(2). doi:10.1111/jspn.12177
2. Hernandez DC, Reesor LM, Murillo R. Food insecurity and adult overweight/obesity: Gender and race/ethnic disparities. *Appetite.* 2017;117:373-378. doi:10.1016/j.appet.2017.07.010
3. Bolt K, Carter L, Casey D, et al. *Healthy Food Availability & Food Bank Network Report. Report for City of Seattle and Seattle City Council.*; 2019.
4. Lerman S. *Seattle Food Action Plan.*; 2012.
5. Birch LL. *Development of Food Preferences.* Vol 19.; 1999. www.annualreviews.org. Accessed February 26, 2020.
6. Vogt RA, Kaiser LL. Still a time to act: A review of institutional marketing of regionally-grown food. doi:10.1007/s10460-007-9106-9
7. Allcott H, Diamond R, Dubé J-P. *The Geography Of Poverty And Nutrition: Food Deserts And Food Choices Across The United States.*; 2017. <http://www.nber.org/papers/w24094>. Accessed February 26, 2020.
8. Crosby R, Noar SM. What is a planning model? An introduction to PRECEDE-PROCEED. *J Public Health Dent.* 2011;71(SUPPL. 1). doi:10.1111/j.1752-7325.2011.00235.x
9. National Farm to School Network. Farm to Early Care and Education. <http://www.farmtoschool.org/our-work/early-care-and-education>. Accessed November 19, 2019.
10. Carroll JD, Demment MM, Stiles SB, et al. Overcoming barriers to vegetable consumption by preschool children: A child care center buying club. *J Hunger Environ Nutr.* 2011;6(2):153-165. doi:10.1080/19320248.2011.576207
11. Sharma S V., Hedberg AM, Skala KA, Chuang RJ, Lewis T. Feasibility and acceptability of a gardening-based nutrition education program in preschoolers from low-income, minority populations. *J Early Child Res.* 2015;13(1):93-110. doi:10.1177/1476718X14538598
12. Namenek Brouwer RJ, Benjamin Neelon SE. Watch Me Grow: A garden-based pilot intervention to increase vegetable and fruit intake in preschoolers. *BMC Public Health.* 2013;13(1). doi:10.1186/1471-2458-13-363
13. Gibson CA, Harvey SP, Spaeth K, Sullivan DK, Lambourne K, Kunkel GH. Farm to School, School to Home: An Evaluation of a Farm to School Program at an Urban Core Head Start Preschool Program. *J Hunger Environ Nutr.* 2014;9(3):334-349. doi:10.1080/19320248.2014.929540
14. Kos M, Jerman J. Preschool children learning about the origin of food, on local farms and in the preschool garden. *Nutr Food Sci.* 2012;42(5):324-331. doi:10.1108/00346651211266836
15. Center for Child & Family Policy. *Preventing Childhood Obesity: Policy and Practice Strategies for North Carolina.*; 2011. doi:10.1016/j.jpeds.2018.09.015

16. Farfan-Ramirez L, Diemoz L, Gong EJ, Lagura MA. Curriculum intervention in preschool children: Nutrition Matters! *J Nutr Educ Behav*. 2011;43(4 Suppl 2):S162-S165. doi:10.1016/j.jneb.2011.03.007
17. Joshi A, Azuma AM, Feenstra G. Do farm-to-school programs make a difference? findings and future research needs. *J Hunger Environ Nutr*. 2008;3(2-3):229-246. doi:10.1080/19320240802244025
18. Maxwell AE, Castillo L, Arce AA, De Anda T, Martins D, McCarthy WJ. Eating veggies is fun! An implementation pilot study in partnership with a YMCA in South Los Angeles. *Prev Chronic Dis*. 2018;15(11):1-10. doi:10.5888/pcd15.180150
19. Berkenkamp J, Mader L. *Farm to Childcare: Opportunities and Challenges for Connecting Young Children with Local Foods and Farmers.*; 2012.
20. Izumi BT, Peden AM, Hallman JA, et al. A community-based participatory research approach to developing the harvest for healthy kids curriculum. *Prog Community Heal Partnerships Res Educ Action*. 2013;7(4):379-384. doi:10.1353/cpr.2013.0047
21. Rutz J, Bloom J, Schroeder-Moreno M, Gunter C. Farm to Childcare: An Analysis of Social and Economic Values in Local Food Systems. *J Agric Food Syst Community Dev*. 2018;8(3):1-17. doi:10.5304/jafscd.2018.083.004
22. Fastring D, Keel K, Colby D, Conner JM, Hilbert A. Head Start Centers Can Influence Healthy Behaviors: Evaluation of a Nutrition and Physical Activity Educational Intervention. *J Sch Health*. 2019;89(9). doi:10.1111/josh.12811
23. Hoffman JA, Agrawal T, Wirth C, et al. Farm to Family: Increasing Access to Affordable Fruits and Vegetables Among Urban Head Start Families. *J Hunger Environ Nutr*. 2012;7(2-3):165-177. doi:10.1080/19320248.2012.703522
24. The Academy of Nutrition and Dietetics. Position of the Academy of Nutrition and Dietetics: Benchmarks for Nutrition in Child Care. *J Acad Nutr Diet*. 2018;118(7):1291-1300. doi:10.1016/j.jand.2018.05.001
25. Williams PA, Cates SC, Blitstein JL, et al. Nutrition-education program improves preschoolers' at-home diet: A group randomized trial. *J Acad Nutr Diet*. 2014;114(7):1001-1008. doi:10.1016/j.jand.2014.01.015
26. Izumi B, Hoffman J, Eckhardt C, A Johnson. Harvest for Healthy Kids: a nutrition education curriculum aligned with the Head Start Child Development and Early Learning Framework. 2015;18:43-56. <https://journals.uncc.edu/dialog/article/view/335>.
27. Hughes LJ. Creating a Farm and Food Learning Box Curriculum for Preschool-aged Children and Their Families. *J Nutr Educ Behav*. 2007;39(3):171-172. doi:10.1016/j.jneb.2006.12.012
28. Nayak K, Hunter K, Owens J, Harrington J. Nutritional Assessment of Snacks and Beverages in Southeastern Virginia Daycare Centers. *Clin Pediatr (Phila)*. 2018;57(4):410-416. doi:10.1177/0009922817730342
29. Bouck MS, Onge RS, He M, et al. Northern fruit and vegetable pilot program: A process evaluation. *Can J Diet Pract Res*. 2011;72(1):14-22. doi:10.3148/72.1.2011.14
30. Izumi B, Hoffman J, Eckhardt C, Johnson A, Hallman J. *Harvest for Healthy Kids : Head Start Teachers ' Perceptions of Curriculum Usability*. Vol 18.; 2015.

31. National Farm to School Network. *Racial and Social Equity Assessment Tool for Farm to School Programs and Policy.*; 2019.
32. Colusa Indian Community Hand in Hand Learning. *Interview.* February 06, 2020
33. Growing Minds Appalachian Sustainable Agriculture Project Farm to School Program Asheville. *Interview.* February 04, 2020
34. Harvest for Healthy Kids. *Interview.* February 06, 2020
35. Little Ones Childcare. *Interview.* February 03, 2020
36. Sunrise Project. *Interview.* January 31, 2020
37. North Carolina Farm to Early Care and Education. *Interview.* February 07, 2020
38. Wake County Smart Start. *Interview.* February 07, 2020
39. He, M., Beynon, C., Sangster Bouck, M., St Onge, R., Stewart, S., Khoshaba, L., . . . Chircoski, B. (2009). Impact evaluation of the Northern Fruit and Vegetable Pilot Programme – a cluster-randomised controlled trial. *Public Health Nutrition*, 12(11), 2199-2208. doi:10.1017/S13689800090058
40. Smith, E., Sutarso, T., & Kaye, G. L. (2019). Access with education improves fruit and vegetable intake in preschool children. *Journal of Nutrition Education and Behavior*, 52(2), 145-151. <https://doi.org/10.1016/j.jneb.2019.07.016>
41. Tripp, L (2020). *A Needs Assessment of the Seattle Farm to Table Program.* Unpublished master's capstone project, University of Washington, Seattle, Washington

9 APPENDIX

9.1 SECTION ONE

The following table contains general information about the seven programs interviewed in the Non-Traditional Literature Review section are answered in table format below. This table includes:

- Program Name
- Program Location
- Program Mission
- Focus Area: Procurement, gardening, food education, and/or technical assistance to farm to early care and education programs
- Funding Sources: Principle funding streams for each program.
- Organization Activities: Main activities of each program.
- Definition of Local and Sustainable: How each program defined local and sustainable.
- Best Practices: Key strengths of each program.

9.2 TABLE A1: ORGANIZATIONS INTERVIEWED IN NON-TRADITIONAL INTERVIEW

Program and Location	Program Mission	Focus Area	Funding Source(s)	Organization Activities	Local & Sustainable	Best Practices
Colusa Indian Community Hand in Hand Learning- <i>Colusa County on the Cachil DeHe Wintun Indian Reservation, California</i>	To encourage healthy lifestyle choices for life-long health and well being.	Procurement, Gardening, and Education	Children and Families Child Care and Development Fund Grant Early Head Start Child and Adult Care Food Program Funding	Offers nutrition and healthy lifestyle education to children living within Colusa county. Meals incorporate local foods. Gardening education offered through a community garden. Farm Stand stocked with donated local produce.	Local: 150 mile radius Sustainable: Sourcing produce from diverse, female farmers	1. Farm stand increases community involvement. 2. Organization of an annual Health Summit where community members can receive nutrition education, recipe ideas, and cooking classes. 3. Focus on tribal community health.

<p>Growing Minds- <i>Asheville, North Carolina</i></p>	<p>"Growing Minds connects farmers, distributors, and school food leaders to ensure students have access to healthy local food."</p>	<p>Education</p>	<p>Appalachian Sustainable Agriculture Project (umbrella organization)</p>	<p>Provides technical support and training to centers. Specifically provides educational resources and support for service of local foods in schools, farm field trips, and school gardens.</p>	<p>Local: 100 mile radius of Asheville, North Carolina Sustainable: Work to decrease teacher turnover and increase parent engagement.</p>	<p>1. Incorporation of evaluations into their services. 2. Created <i>Reach for the Stars</i>: A document that aligns all environmental rating categories with farm to preschool activities.</p>
<p>Harvest for Healthy Kids- <i>Portland, Oregon</i></p>	<p>"Harvest for Healthy Kids helps children develop healthy eating habits. The program connects young children with fresh food grown close to home through activity kits that teach science, math and literacy."</p>	<p>Education</p>	<p>Currently no funding for the Harvest for Healthy Kids curriculum specifically.</p> <p>All funding on the website was for curriculum research.</p> <p>Head Start Budget is used for kitchen supplies and food kits.</p>	<p>Provides a multi-faceted food curriculum evaluated by administrators, teachers, and researchers. Curriculum incorporates cooking, food tasting, read aloud book discussions, and interactive picture cards about food and agriculture.</p>	<p>Local: Use of foods grown in Oregon State. Sustainable: Use of foods grown in Oregon State.</p>	<p>1. Use of a central kitchen to serve several classrooms. 2. Rigorously evaluated curricula with a variety of stakeholder input (teachers, schools, researchers, and policymakers).</p>
<p>Little Ones Childcare- <i>Forest Park, Georgia</i></p>	<p>"Hands-on education in nutrition, cooking, gardening, and promotion of local foods to participating early care providers while disseminating resources for providers across the state"</p>	<p>Procurement, Gardening, and Education</p>	<p>Fully funded by a Kellogg Grant</p>	<p>Offers garden-based education that incorporates locally sourced foods into meals. Also sells local produce to the community through a farm stand.</p>	<p>Local: Delivery of food straight from farms via regional food distributor. Sustainable: Prioritize working with female farmers of color.</p>	<p>1. Teachers and staff model healthy eating behavior and understand their influence on child eating habits. 2. Mandatory program-specific parent orientation. 3. Investing in good teachers and trained chefs who are also RDs. 4. Supports farmers of color and female farmers</p>
<p>North Carolina Farm to Early Care and Education <i>-Raleigh, North Carolina</i></p>	<p>To create an equitable food system that ensures children, regardless of geographic location, race, gender, and socio-economic status, are introduced to and have access to local and healthy food.</p>	<p>Procurement, Gardening, Education, and Technical Assistance for farm to early care and education programs.</p>	<p>Fully funded by the Kellogg Project</p>	<p>Provides technical assistance to childcare facilities and organizations to incorporate local foods in meals, snacks, and taste tests. Also helps organize farmer visits, cooking classes, and gardening.</p>	<p>Local: Each center decides what local means to them (within X miles or in-state). Sustainability: No formal definition of sustainability, but work with farmers employing sustainable practices.</p>	<p>1. Specific interest in racial equity. 2. Mandatory all-staff training when farm to early care and education programs partner with centers. 3. Use of the Nutrition and Physical Activity Self-Assessment for Child Care.</p>

<p>Sunrise Project- <i>Lawrence, Kansas</i></p>	<p>“To provide space and opportunities for people of all ages and backgrounds to build an equitable community through education, good food, and social connection.”</p>	<p>Procurement and Gardening</p>	<p>USDA Farm to School</p> <p>Local community grants</p> <p>Kansas Health Foundation grant</p> <p>Private Donations</p> <p>Fundraising</p>	<p>Offers weekly sample tables during the growing season, cooking classes for school-age children, farm field trips and garden-based lessons.</p>	<p>Local: Less of a focus on local food.</p> <p>Sustainable: Avoiding a top-down method of food education and focus on community self-sufficiency</p>	<p>1. Community garden that can be harvested by anyone and school-specific gardens. 2. Hired a specific family engagement facilitator designed to work with families. 3. Incorporation of all voices into the food conversation.</p>
<p>Wake County Smart Start-Wake County, North Carolina</p>	<p>“To build the capacity of families and the community to prepare children for success in school and in life by: 1. Improving the quality, accessibility and affordability of childcare, 2. Provide preventive health and early intervention services and 3. Offer family support services.”</p>	<p>Procurement, Gardening, Education, Technical Assistance for Farm to early care and education programs</p>	<p>John Rex Endowment</p> <p>Shape NC grant</p> <p>Blue Cross Blue Shield</p> <p>Individual hospital funding</p>	<p>Incorporates local foods through tastings, meals, and snacks. Also organizes farm visits, and cooking classes.</p>	<p>Local: Partnerships with local gardens.</p> <p>Sustainable: These local gardens can provide technical assistance “within ten miles” of the center.</p>	<p>1. Built connections with health advocacy organizations, farmers, universities and other community groups. 2. Emphasis on farmers’ needs. 3. Providing services that best fit the needs of each center.</p>