

# Results From the 2018 National Farm to Early Care and Education Survey

Conducted by the National Farm to School Network and  
Michigan State University Center for Regional Food Systems



## National Farm to School Network

The National Farm to School Network (NFSN) is an information, advocacy, and networking hub for communities working to bring local food sourcing, school gardens, and food and agriculture education into schools and early care and education (ECE) settings. NFSN's network model includes Core and Supporting Partner organizations in all 50 states, Washington, DC, and US territories that are content experts and facilitators for farm to school initiatives, as well as over 20,000 farm to school supporters, an Advisory Board, and staff. This network works at the state and national levels to expand and sustain the number, quality, and impact of farm to school and farm to ECE initiatives. Originally established with a focus on the K–12 sector in 2007, NFSN expanded its robust network and expertise to include ECE settings in 2011. Since that time, NFSN has contributed leadership to the burgeoning farm to ECE movement by convening national working groups, conducting national surveys of ECE providers, creating and disseminating resources, and building capacity for its national network of partners. Learn more about NFSN at [farmtoschool.org](http://farmtoschool.org).



## Michigan State University Center for Regional Food Systems

The Michigan State University Center for Regional Food Systems (CRFS) is an applied research, education, and outreach organization. CRFS brings together the expertise of both MSU faculty and staff to enhance the understanding of and increase engagement with regional food systems. CRFS has worked to advance food systems grounded in local regions since 2012, focusing on food that is healthy, green, fair, and affordable in an effort to build a thriving economy, support equity, and enhance sustainability at the state, national, and global levels. Find out more about CRFS at [foodsystems.msu.edu](http://foodsystems.msu.edu).

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# Executive Summary

Farm to early care and education (ECE) is a set of activities and strategies—including the use of local foods in meals and snacks, gardening opportunities, and food, nutrition, and agriculture learning activities—implemented with the goals of promoting health and wellness and enhancing the overall quality of the educational experience in all types of ECE settings.

In 2018, the National Farm to School Network (NFSN), in partnership with the Michigan State University Center for Regional Food Systems (CRFS), implemented the 2018 National Farm to Early Care and Education Survey. Similar surveys were conducted in 2012 by NFSN, Ecotrust, and the NFSN Farm to Preschool Subcommittee and in 2015 by NFSN with support of the Farm to ECE Working Group. As with the previous iterations, the 2018 version was implemented to better understand the current landscape and reach of farm to ECE, including the application of activities, motivations, and challenges.

The 2018 survey utilized a purposive sample inviting a representative sample of ECE educators to participate in the survey in order to gain a better perspective of the activities, motivations for implementation, and barriers to farm to ECE among a variety of types of providers. However, limitations of the sampling method and survey design have implications for interpreting the results. These limitations also point to a need for further research and analysis to gain a better understanding of the needs and opportunities for expansion of farm to ECE across all types of programs and settings. This survey and subsequent analysis represent the best efforts to date to capture the information available across as many program types as possible. Future research to evaluate the various characteristics associated with implementation of farm to ECE activities and barriers to implementation is necessary to inform policy and programmatic development to advance farm to ECE.

## Key Findings

- Of the 2,030 ECE providers responding to the survey from 45 states and Washington D.C., **49% indicated that they engaged in farm to ECE activities** within the last year.
- Another 30% of those surveyed (N = 2,030) indicated that they **intend to start implementing farm to ECE activities in the future**.
- Of the farm to ECE participating sites (1,002 respondents), 34% reported that 50% or more of the children they serve are **eligible for free and reduced-price meals**.
- Respondents reported **positive feedback on behalf of different groups** about their farm to ECE activities (n = 1,002): 81.9% reported positive or very positive feedback about farm to ECE initiatives from children, 72.9% from parents, and 62.3% from ECE staff.
- Across all respondents engaged in farm to ECE activities (n = 1,002), 54% anticipate **increasing local food purchases** in the next 2–3 years.
- Among providers **participating in farm to ECE activities** (n = 1,002), a third (33.0%) have been doing so for more than 5 years, and 14.4% started activities in the last year. Nearly one-third (29.5%) of respondents reported participating for between 1 and 3 years, and 14.5% reported participating in farm to ECE activities for at least 3 years but less than 5 years.
- The top 3 **motivators for engaging in farm to ECE activities** among respondents (n = 1,002) included teaching children about where food comes from and how it is grown (95.5%), improving children’s health (95.1%), and providing children with experiential learning opportunities (94.9%).

## Additional Findings:

- **ECE sites reported participating in farm to ECE activities (n = 1,002) across program site types**, including licensed family child care (37%), child care centers (34%), private preschools (20%), and Head Start or Early Head Start (13%). Other types of participating sites included state/public preschool programs (6%), preschool or child care in K–12 districts (3%), tribal child care (1%), and unlicensed family child care (license-exempt) (<1%).
- Providers reported that in the last 12 months, **the top 3 farm to ECE activities** that they engaged in (n = 1,002) were educating children about locally grown food, how food grows and where it comes from (76.0%), planting or working with children in an edible garden at the site (75.1%), and serving locally grown food in meals, snacks, or taste tests (68.9%).
- Of those participating in farm to ECE (n = 1,002), 717 (75.2%) indicated that they **purchase local foods for their programs**. Total food purchases averaged \$25,906 in the last 12 months, with an average of \$4,490 of those purchases coming from local sources.
- Responses indicated that 35.3% of respondents participating in farm to ECE (n = 1,002) **define local** as “within the same city/county,” with another 25.3% reporting local as “within a 50-mile radius” and 19.2% as “in state.”
- Respondents participating in farm to ECE (n = 1,002) said they **procure local foods from a variety of direct and indirect sources**. Of those purchasing local, one-third purchased food directly from farmers markets (33.9%) or individual farmers/producers (28.0%). Just under one-third (30.8%) procured food from an on-site or community garden. From intermediate sources, ECE sites were most likely to list “other” (74.3%) as a source for local foods, but include specific names of grocery stores/retail outlets or as well as food banks and school systems as specific examples. Respondents also indicated they procured local foods from distributors (17.4%), grocery stores/retail outlets (8.9%), or food processors or manufacturers (8.1%).
- Respondents participating in farm to ECE (n = 1,002) shared milk as the **most frequently served local product**, with 21.7% of respondents reporting that local milk was served daily. Fruit (14.2%) and vegetables (14.0%) were the second and third most frequently served local products.
- Among participants indicating they implement farm to ECE activities (n = 1,002), **food prepared from scratch** was served daily by almost half of respondents (45.5%), and 16.1% indicated they serve food prepared from scratch a few times per week.
- Cost of items emerged as the **most frequently cited barrier to purchasing or procuring local products** (33.3%). Seasonality of fruits and vegetables (31.9%), reliability of product supply (26.9%), finding suppliers/farmers to provide local food (26.7%), and knowing how to order local items (24.4%) rounded out the top five barriers, in order (n = 1,002).



Credit: Little Ones Learning Center, Linden Tree Photography

# Introduction

## Early Care and Education

Most children under five receive care from someone other than a parent.<sup>1</sup> ECE settings can vary widely, but they generally fall into either center-based care and education or home-based settings. Center-based care typically takes place in a facility, funded either publicly or privately, and may be given by a for-profit or nonprofit entity. There are numerous types of child care centers, such as preschools (both state-funded and privately funded programs), private child care programs and facilities, Head Start/Early Head Start, and programs in K–12 school districts. In contrast, home-based care or “family child care” takes place in the private homes of individuals, including relative and non-relative care. Across the United States, there are approximately 118,000 family child care providers and 129,000 center-based care and education programs.<sup>2</sup> Current data suggested that about 11 million children under five spend an average of 35 hours a week in ECE settings.<sup>2</sup>

## Importance of Early Care and Education

As a result, these venues are critical places to reach children and their families using activities and consistent messaging that promote healthy habits as well as high-quality education experiences, including farm to ECE. Research suggested that children’s earliest experiences with food, often taking place within ECE settings, can influence their taste preferences and subsequently their lifelong health.<sup>3</sup> The long-term benefits of high-quality ECE settings is also known, with demonstrated outcomes in cognitive, social, and emotional development, leading to success in formal schooling and beyond.<sup>4-6</sup>

ECE settings provide care for children across age groups. The ability of some settings to provide care for multi-age groups can create possibilities for educational opportunities without reducing quality. This means that early care educators can support children of different ages in meaningful, authentic learning opportunities across learning domains, including approaches to learning, cognitive development, language and literacy, physical health and wellness, and social and emotional development. This can maximize learning and development based on individual and group needs.

Although early childhood is considered an optimal time for development, children in this stage of childhood also face significant challenges. Notably, despite years of declining obesity rates, recent research has suggested an increase in obesity rates among children aged two to five in the United States.<sup>7</sup> Obesity in early childhood creates risks not only for physical health but also socioemotional well-being<sup>8-9</sup> and quality of life, which could impair children’s ability to function in school. Lack of exposure to high-quality ECE settings can further affect school readiness, and reduced access to nutritious food that might be available through high-quality ECE settings can further impede child development. Despite the documented importance of high-quality ECE settings, many families do not have access to them in their communities. Children from low-income families are less likely to be enrolled in formal ECE than their higher income peers.<sup>10</sup>

## Farm to Early Care and Education

Farm to ECE is a set of activities and strategies that include three core elements of farm to school (see Figure 1) – local food procurement, school gardens, and food, nutrition, and agriculture education – implemented with the goal of enhancing the quality of the ECE environment and the educational experience in all types of ECE settings (e.g., preschools, child care centers, family child care homes, Head Start/Early Head Start, programs in K–12 school districts). As farm to ECE is not a “one size fits all” strategy, the core elements adapt readily to different settings, geographic locations, enrollment numbers, and diverse ages and abilities of children.

**Local food procurement.** Food procurement and purchasing can vary widely in ECE settings based on the factors mentioned previously. Sites serving small numbers of children, such as family child care homes or small centers, may require very small quantities of food and can effectively purchase local foods from a local grocery store, co-op, or farmers market or through a direct relationship with a local small farm. Larger centers or chains of centers that require larger food quantities may purchase local food through their broadline distributor, a food hub, or a larger local farm or farmer cooperative. ECE sites that participate in the United States Department of Agriculture (USDA) Child and Adult Care Food Program (CACFP), a food

program for ECE settings and adult care programs, can purchase local foods with CACFP funds. Local foods can be included in CACFP reimbursable meals and snacks.

**Gardening.** Hands-on gardening opportunities allow young children to strengthen their understanding of how food grows and where food comes from. The experiential nature of gardening also aligns with the learning styles of young children. Gardening experiences may range from planting a seed and watching it sprout on an indoor windowsill to maintaining large outdoor plots or raised beds.

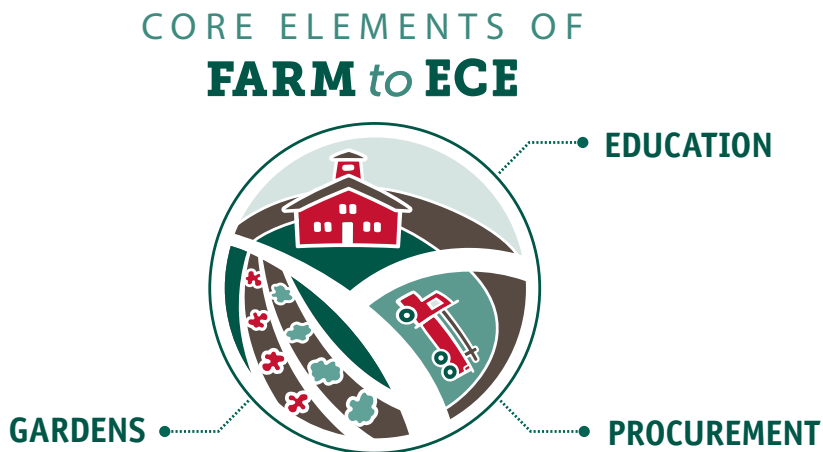
**Education.** Educational opportunities related to food, nutrition, and agriculture are expansive and diverse. Children can learn about how food grows and where it comes from by reading farm and garden books and engaging in experiential education activities such as cooking and tasting local foods. Field trips to farms, orchards, and markets and visits from chefs, farmers, or ranchers help children understand their community food system. Local foods can be used in literacy, math, science, and social studies lessons to support achievement of early learning standards. Resources to support farm to ECE have proliferated and include ready-made lesson plans, family engagement tools, and seasonal calendars to support integration throughout the year.

### Farm to Early Care and Education: Benefits Aligned With ECE Priorities

Farm to ECE offers benefits that support the goals and priorities of the ECE community. These include an emphasis on experiential learning; family and community engagement; health and wellness for children, families, and caregivers; and achievement of programmatic and learning standards. Farm to ECE aims to advance racial and social equity by increasing access to healthy, local foods and high quality education opportunities for all children. Farm to ECE also provides additional market opportunities for farmers, and supports thriving communities.

**Experiential learning.** The experiential learning opportunities associated with farm to ECE, including gardening, cooking, and taste tests, enhance the learning environment and align with young children's natural learning style. Experiential learning supports appropriate cognitive, emotional, social, and physical development.<sup>11</sup>

Figure 1: Core Elements of Farm to ECE



Even the youngest children can engage in multisensory experiences by exploring new foods with sight, touch, smell, and taste.

**Health and wellness.** The earliest years of life are formative years for developing taste preferences and healthy eating habits.<sup>12</sup> Farm to ECE activities such as taste tests, cooking lessons, and gardening offer repeated exposures to new, healthy foods, promoting lifelong healthy food preferences and eating patterns and decreasing the risk of obesity in childhood and beyond.<sup>13,14</sup> Farm to ECE activities also expose teachers and providers to new foods and healthy habits, increasing their capacity to model healthy behaviors.

**Family and community engagement.** Family involvement tends to be strongest during the early childhood years. Gardening and food-related activities appeal to families and create more opportunities for meaningful and impactful family engagement. Young children take home the excitement of learning about new foods and act as a catalyst for change, influencing parent and family food choices.<sup>15,16</sup> Additionally, farm to ECE benefits the entire community. Purchasing local products creates market opportunities for farmers and bolsters local and regional food systems.<sup>17</sup>

**Programmatic and early learning standards.** Experiential learning, health and wellness, and family and community engagement are all components of many programmatic and early learning standards. In addressing these priority areas, farm to ECE supports achievement of the Head Start Program Performance Standards,<sup>18</sup> National Association



for the Education of Young Children Program Standards, and many state programmatic standards. Additionally, the diverse educational experiences offered by farm to ECE align with multiple domains and subdomains of the Head Start Early Learning Outcomes Framework and most state early learning standards.

## **Farm to Early Care and Education: Legislative and Administrative Policy**

The Child Nutrition Reauthorization of 2010, called the Healthy, Hunger-Free Kids Act, was landmark legislation for supporting and institutionalizing farm to school at the federal level. This Act established the USDA Farm to School Grant Program and propelled the creation of what is now known as the USDA Office of Community Food Systems (OCFS) to administer the national grant program and provide technical assistance and support for farm to school initiatives.<sup>19</sup> Although the majority of grant funds goes to K–12 districts, CACFP programs in K–12 districts and state-level farm to ECE initiatives have received funding. OCFS offers a growing list of resources and other support for farm to ECE, including fact sheets and staff devoted to farm to CACFP in each USDA regional office.<sup>20</sup>

The number of enacted state-level farm to school bills continues to increase steadily. As of March 31, 2017, 46 states and Washington, DC, passed some type of law supporting farm to school.<sup>21</sup> These laws range from supportive bills and resolutions to those creating funding streams for incentive and/or reimbursement programs, food education, school gardens, and farm to school positions or networks. Despite this, the number of policies specifically targeting farm to ECE remains low. A few states do include ECE in their farm to school legislation or use general language that allows ECE sites to benefit from that legislation. One of the few laws specific to farm to ECE is the Healthy Tots Act, passed in 2014 in Washington, DC.<sup>22</sup> It aims to increase CACFP participation with an overall increased CACFP reimbursement and higher reimbursement for local foods served, mini-grants for nutrition and gardening activities, and a set of ECE wellness guidelines (which includes farm to ECE components). The Healthy Tots Act is in its third year of implementation and CACFP participation has increased in the District, although no evaluation has been completed on the farm to ECE components of the legislation. Another notable piece of state-level farm to ECE legislation was signed into law in Vermont in 2017. An update to the 2006

Rozo McLaughlin Farm to School Act, S.33 ensures that ECE settings are fully eligible for the state's farm to school programs, including grants and technical assistance.<sup>23</sup>

As a supplement or alternative to legislative policy, some states are looking toward non-legislative policy changes to promote farm to ECE. These changes can include policies at the organization, institutional, or agency level that affect farm to ECE in practice. Wisconsin, for example, has added gardening as an optional activity for sites to garner quality points in their Quality Rating and Improvement System (QRIS), YoungStar. Other states are following suit by collaborating with state licensing agencies and QRIS administrators to incorporate farm to ECE components in licensing and standard updates. States are also looking to leverage incoming ECE dollars, including Child Care and Development Block Grant and Head Start funding, to support farm to ECE activities that increase the quality of ECE settings.

## **Farm to Early Care and Education: State Networks and Positions**

State-level farm to ECE initiatives are vital to building capacity for institutionalizing, and sustaining farm to ECE implementation. In addition to state-level policy, these strategies include state-level farm to ECE positions and state farm to ECE networks. A growing number of states have dedicated farm to ECE positions in nonprofits, university Cooperative Extensions, and/or state agencies. For example, the Iowa Association for the Education of Young Children employs a farm to ECE program specialist, and in South Carolina, a portion of the CACFP director's time is devoted to farm to ECE.<sup>24</sup> This dedicated staff time increases the capacity for leadership and coordination at the state level, the development of state-specific resources and programs, and localized technical assistance and support. These state-level positions often play a key role in state farm to ECE networks. Farm to ECE networks are forming in states across the country, including the North Carolina Farm to Preschool Network<sup>25</sup> and the Georgia Farm to ECE Coalition.<sup>26</sup> These networks may form as a subgroup of a larger farm to school or institution network or may develop independently. Farm to ECE brings together diverse stakeholders at the intersection of multiple sectors, and a coordinated network can ensure that those stakeholders are aligned in their farm to ECE priorities and messaging, diminish duplication of efforts, and expand and multiply reach.

## Farm to Early Care and Education: Current Research

Peer-reviewed research on farm to ECE as an intervention strategy is still relatively limited. However, the few studies available demonstrated the potential impact of farm to ECE on children and families. Studies indicated that participation in farm to ECE activities contributes to an increased willingness to try and reported liking of target fruits and vegetables<sup>15,27</sup> and increased fruit and vegetable consumption.<sup>28-31</sup> Additional benefits cited included positive reactions to the intervention activities from both parents and teachers<sup>15,16,29,31,32</sup> and an increase in local foods served in the homes of participating families.<sup>28</sup> Studies also identified key challenges to farm to ECE implementation: logistical barriers to purchasing local food, limited communication among stakeholders, and limitations to family engagement.<sup>33</sup>

Farm to school in K–12 schools has been more extensively studied. Studies suggested that farm to school participation increased students' healthy attitudes and behaviors, including willingness to try new foods, fruit and vegetable consumption, and physical activity, while decreasing unhealthy behaviors, including consumption of unhealthy food, intake of sugar-sweetened beverages, and screen time.<sup>34</sup> Further, children's participation in farm to school activities may improve their overall academic achievement, school engagement, and social skills.<sup>35,36</sup> Studies also indicated that farm to school activities may contribute to increased student participation in meal programs, generating increased revenue for school food service authorities.<sup>37,38</sup> Although farmers' motivations to

supply to institutions such as schools may be grounded in social values such as supplying healthy, local foods to customers,<sup>39</sup> local farmers may benefit from increased income and market diversification, and local economies may benefit from stimulated economic activity and increased consumer connectivity to the state's food economy.<sup>17</sup>

The USDA Farm to School Census, completed in 2013 and 2015, solicited information from school districts across the United States. In the 2013 census, 1,163 (30%) of responding school districts were participating in farm to school activities with preschool-aged children. The 2015 census data showed a slight increase, with 1,516 (32%) of reporting districts participating in farm to school activities with preschool-aged children.<sup>40</sup>

The survey series completed by NFSN in 2012, 2015, and now 2018 is the only national farm to ECE-specific assessment of activity reach and participation. The 2012 survey gathered input from 494 farm to ECE participating managers, directors, administrators, teachers, food service coordinators, and partner organizations from 39 states and Puerto Rico.<sup>33</sup> The 2015 survey included survey responses from both farm to ECE participating and non-participating ECE sites. Of 1,496 respondents to the 2015 survey, a little more than half (54.4%) in 48 states and Washington, DC, reported that they carried out some type of farm to ECE activity within the last year. Another quarter (28.4%) planned to start farm to ECE activities in the next year.

Credit: Little Ones Learning Center, Linden Tree Photography



# Survey Objectives and Methods

The 2018 survey sought to build on information obtained through NFSN's 2012 and 2015 farm to ECE surveys, as well as the USDA Farm to School Censuses (2013 and 2015). NFSN partnered with CRFS to implement the 2018 National Farm to Early Care and Education Survey. The primary goals of the survey were to estimate the reach of farm to ECE and to gain a better understanding of farm to ECE activities, including the following:

- Where and what types of farm to ECE activities are being implemented
- Motivations for farm to ECE activity implementation
- Barriers to implementing farm to ECE activities
- Program needs to support growth of farm to ECE efforts

Lists of providers' emails, including providers in center-based and family child care, Head Start and Early Head Start, public and private preschools, preschool and child care in K–12 school districts, tribal child care, and license-exempt family child care, were obtained from state agencies, such as departments of education and Child Care Resource and Referral (CCR&R) agencies. These emails were then compiled for survey distribution. It is important to note that this approach was used because a national listing of ECE sites is not publicly available. The purposive sample was chosen over the snowball methodology used in 2012 and 2015 to obtain a representative sampling of diverse ECE settings, reduce response bias, and thus better understand what support is needed to nurture farm to ECE activities in those specific settings.

Prior to contacting participants, the study protocol was approved by the MSU Institutional Review Board for research on human subjects. Emails were either sent directly to providers using email addresses from the compiled list or sent to CCR&R and/or Head Start Collaboration Office emails for dissemination when complete email lists could not be obtained from a state. A link to the survey was provided in batches to enable participants to complete the survey in either English or Spanish via Qualtrics, and the survey was available to participants from mid-March to early April 2018. An error in email dissemination was discovered for two states

that did not receive the invitation to participate, and the invitation email was subsequently resent to those two states. Participants indicated consent for participation after reading about the purpose of the survey, with an option to discontinue participation at any time and to complete questions in the survey as desired. As an incentive, all participants regardless of survey completion were entered into a drawing to win a farm to ECE curriculum after all data was collected. At the close of the data collection period, all responses were cleaned to eliminate duplicates, remove partial or invalid responses, and analyzed using SPSS Statistics software.

Although the purposive sampling is an attempt to gain a better perspective of the activities, motivations for implementation, and barriers to farm to ECE by obtaining a representative sample of providers, there are limitations with the sampling method and survey design with implications for interpretation of the results. First, with only 4.1% of the ECE providers completing the sample, this is a best attempt at capturing the previously noted questions. Despite the small response rate, the stratification across ECE settings is more diverse than previous versions resulting in a more accurate representation of providers. Additionally, although it is hypothesized that farm to ECE activities have increased since the previous survey was conducted in 2015, it is difficult to compare this version to previous surveys given the different sampling design. However, the sample will allow for more accurate analysis of farm to ECE activities, motivations, and challenges and barriers to implementation while providing the most accurate, best possible, and most current perspective on farm to ECE activities nationwide.

Credit: Little Ones Learning Center, Linden Tree Photography



# Findings

## Demographics

A total of 64,402 emails were distributed across all states and US territories, with 2,655 ECE sites responding to the survey (a return rate of 4.1%). Of those respondents, 2,030 surveys were deemed usable by the research team. Responses were considered usable if they answered 75% of the demographic questions and answered questions about the site’s activities, even if they did not provide responses to the questions about barriers or motivation.

**Demographics by geography.** ECE providers responded from 45 states and Washington D.C., and nearly 30% of respondents were from the Mountain Plains region (see Table 1). Responses were not received from Delaware, Illinois, Mississippi, South Dakota, Tennessee, or the US territories. The states with the highest number of responses were Iowa (167 responses), Washington (153 responses), and Wisconsin (123 responses). Additionally, respondents indicated their sites were in urban (27.1%), rural (29.4%), or suburban (41.5%) areas (see Table 2). Additional state-level data is available in Appendix 1.

**Table 1. Survey Respondents by Region<sup>a,b</sup>**

Region	Frequency	Percentage <sup>c</sup>
Mountain Plains	468	23.1%
Western	337	16.6%
Midwest	330	16.3%
Southeast	266	13.1%
Mid-Atlantic	263	13.0%
Northeast	218	10.7%
Southwest	148	7.3%

<sup>a</sup>N = 2,030; <sup>b</sup>Regions are delineated using the USDA Food and Nutrition Services Regional Office Map available at <https://www.fns.usda.gov/fns-regional-offices>;

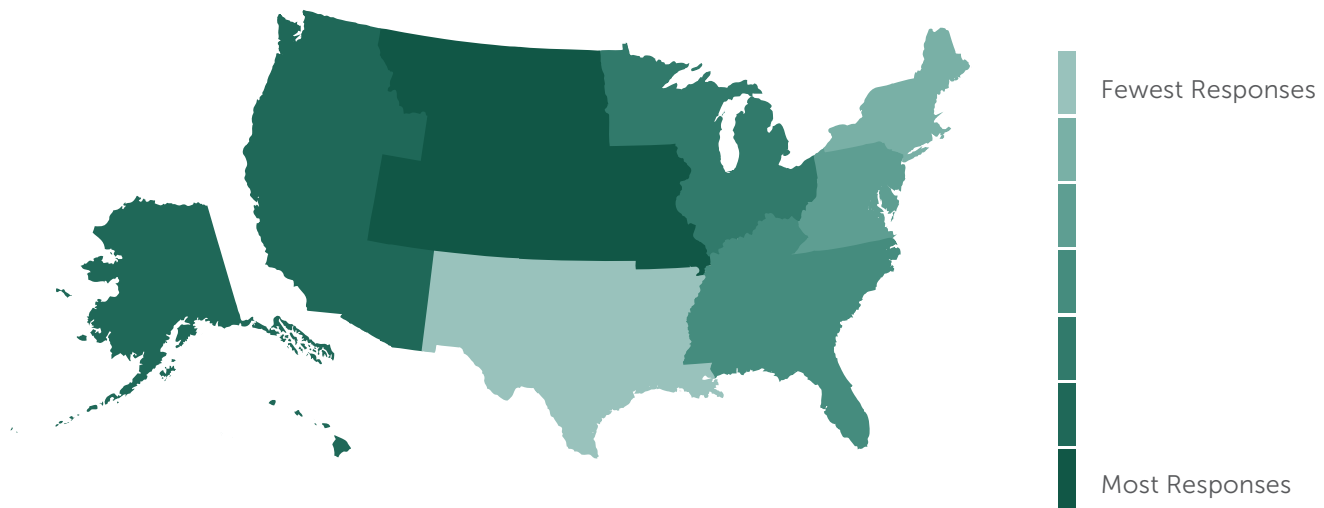
<sup>c</sup>Due to rounding, percentages may not add up to exactly 100.

**Table 2. Survey Respondents by Geographic Area (Self-Reported)<sup>a</sup>**

Geographic Area	Frequency	Percentage
Suburban	842	41.5%
Rural	597	29.4%
Urban	550	27.1%
Tribal	31	1.5%
Not provided	10	0.5%

<sup>a</sup>N = 2,030.

## Survey Respondents by Region<sup>a</sup>



<sup>a</sup>Regions are delineated using the USDA Food and Nutrition Services Regional Office Map available at <https://www.fns.usda.gov/fns-regional-offices>

**Demographics of responding sites.** Approximately 740 respondents described their settings as child care centers (36.5%). Another 711 (35.0%) described themselves as licensed family child care, 378 (18.6%) as private preschools, 245 (12.1%) as Head Start or Early Head Start centers, and 11 (0.5%) as unlicensed family child care (license-exempt) (see Table 3). Of all respondents, just over half provided care for infants (58.3%), nearly three-quarters (74.3%) had toddlers enrolled, and almost all had preschoolers in their programs (94.0%), as shown in Table 4.

Reported total enrollment at responding ECE sites was 214,141 children enrolled full-time and 41,116 children enrolled part-time (see Table 5). Among responding sites, 35.9% reported that less than 10% of enrolled children qualified for free and reduced-price lunch (see Table 6). An additional 13.3% reported that 11%–25% of their enrolled children fell into this category, and 12.0% were in the range of 26%–50%. Respondents also reported their participation in CACFP; 55.4% participated and 30.1% did not. Respondents indicated serving an average of 24 meals and 30 snacks per day (see Table 7).

**Table 3. Program Model for ECE Facilities (All Respondents)<sup>a</sup>**

Program Model	Frequency	Percentage <sup>b</sup>
Child care center	740	36.5%
Licensed family child care	711	35.0%
Private preschool (family pay, tuition-based)	378	18.6%
Head Start or Early Head Start center	245	12.1%
Other (please specify)	189	9.3%
State preschool (all public preschool programs)	116	5.7%
Preschool or child care through a K–12 school district	85	4.2%
Tribal	17	0.8%
Unlicensed family child care	11	0.5%

<sup>a</sup>N = 2,492.

<sup>b</sup>Percentages total more than 100% because respondents may have chosen more than one category.

**Table 4. Ages of Children Served at ECE Sites<sup>a</sup>**

Age Group	Percentage <sup>b</sup>
Infants	58.3%
Toddlers	74.8%
Preschoolers	94.0%

<sup>a</sup>N = 2,030.

<sup>b</sup>Percentages total more than 100% because sites may provide care for children in multiple age groups.

**Table 5. Enrollment Status of Children at ECE Sites<sup>a</sup>**

Status	Median	Total
Full-time	22	214,141
Part-time	4	41,116

<sup>a</sup>N = 2,030.

**Table 6. Proportion of Enrolled Children Eligible for Free and Reduced-Price Meals<sup>a</sup>**

Proportion	Frequency	Percentage <sup>b</sup>
Less than 10%	728	35.9%
11%–25%	270	13.3%
26%–50%	243	12.0%
51%–75%	221	10.9%
76%–99%	307	15.1%
100%	231	11.4%
Did not respond	30	1.5%

<sup>a</sup>N = 2,030.

<sup>b</sup>Due to rounding, percentages may not add up to exactly 100.

**Table 7. Approximate Number of Daily Snacks or Meals<sup>a</sup>**

Meal or Snack	Average	Total
Meals served per day	24	126,493
Snacks served per day	30	82,189

<sup>a</sup>N = 2,030.

**Child data.** Respondents also provided data regarding the race/ethnicity of the children for whom they were providing care, indicating that the majority of children in their care were White (78.3%), as shown in Table 8. Other races/ethnicities indicated were Black/African American

(13.1%), Other (3.0%), Hispanic, Latino, or Spanish (1.7%), American Indian/Alaska Native (1.0%), Asian (1.3%), Native Hawaiian/Other Pacific Islander (0.3%), Middle Eastern/North African (0.8%), and multiple races (0.5%).

**Table 8. Race/Ethnicity of Children in Care of Respondents<sup>a</sup>**

Race/Ethnicity	Frequency <sup>b,c</sup>	Percentage
American Indian/Alaska Native	269	1.0%
Asian	345	1.3%
Black/African American	3,430	13.1%
Hispanic, Latino, or Spanish	440	1.7%
Middle Eastern or North African	222	0.8%
Multiple races	135	0.5%
Native Hawaiian/other Pacific Islander	73	0.3%
Other	784	3.0%
White	20,563	78.3%
<b>Total</b>	<b>26,261</b>	<b>100.0%</b>

<sup>a</sup>N = 2,030.

<sup>b</sup>N = 280.

<sup>c</sup>information missing for 1,750.

**Table 9. Top 10 States With Farm to ECE Participating Sites Responding<sup>a</sup>**

State	Frequency of Farm to ECE Participating Sites	Percentage of Total National Farm to ECE Participating Respondents	Percentage Reporting Farm to ECE of State Respondents
Iowa	86	8.6%	51.5%
Washington	72	7.2%	47.1%
Wisconsin	66	6.6%	53.7%
Montana	51	5.1%	57.3%
Pennsylvania	51	5.1%	44.0%
Vermont	46	4.6%	59.0%
Florida	38	3.8%	38.0%
Maine	38	3.8%	64.4%
Missouri	38	3.8%	42.7%
New Jersey	36	3.6%	48.0%

<sup>a</sup>N = 1,002.

## Farm to Early Care and Education Activity Engagement

The 2018 National Farm to Early Care and Education Survey utilized the USDA Farm to School Census definition of “farm to ECE,” which aligns with NFSN’s core elements of farm to ECE. This definition indicates that farm to ECE activities can include, but are not limited to, the following:

-  Serving local foods at meals, snacks, or in the classroom;
-  Planting and caring for edible gardens;
-  Conducting educational activities focused on local food, including visits from farmers in the classroom, field trips or site visits to farms or farmers markets, and/or educational sessions for children, families or community members.

The 2018 survey indicated that 49.4% of ECE sites reported engagement in farm to ECE activities within the last year. Additionally, 30.1% of ECE sites are planning to start activities in the future.

Of those responding to the survey, a majority of ECE sites were child care centers (740 respondents or 36.5%), but of those indicating participation in farm to ECE activities, a larger percentage identified as licensed family child care (371 sites or 37.0%).

**Participation across states and regions.** As previously noted, states with the highest number of respondents participating in farm to ECE activities were in the Western and the Mountain Plains regions, including Iowa and Washington (see Table 9).



Credit: Little Ones Learning Center, Linden Tree Photography

Further examination of engagement with farm to ECE in individual states revealed that states with the highest participation rates varied within the regions. The states with the highest internal farm to ECE participation rates were Connecticut, Hawaii, and Utah (see Table 10), with

three other states from the Northeast region also in the top 10. However, it should be noted that the actual number of participants from the states may be relatively small, resulting in higher percentages.

Table 10. Top 10 States With Highest Proportion of Farm to ECE Participation Rates<sup>a</sup>

State	Farm to ECE Frequency	State Frequency	Farm to ECE in State	Farm to ECE in Region	Farm to ECE Total
Connecticut	2	2	100.0%	0.9%	0.1%
Hawaii	15	21	71.4%	4.5%	0.7%
Utah	22	32	68.8%	4.7%	1.1%
New Hampshire	4	6	66.7%	1.8%	0.2%
Rhode Island	4	6	66.7%	1.8%	0.2%
Washington, DC	6	9	66.7%	2.3%	0.3%
Maine	38	59	64.4%	17.4%	1.9%
Idaho	27	42	64.3%	8.0%	1.3%
New Mexico	11	18	61.1%	7.4%	0.5%
Oregon	14	23	60.9%	4.2%	0.7%

<sup>a</sup>N = 2,030.

Regions Legend:



**Duration of farm to ECE participation.** Among providers participating in farm to ECE activities, about a third (33.0%) have been doing so for more than 5 years, and 14.5% started activities in the last year (see Figure 2). Nearly a third of respondents reported doing so for 1–3 years (29.5%), and almost 15% (14.5%) reported participating in farm to ECE activities for at least 3 years but less than 5 years.

**Starting farm to ECE Activities:** Of the 2,030 total respondents, 30.1% reported that they intended to start farm to ECE activities in the future. Among those planning to start activities in the future, 13.2% planned to start in 2018, the year of the survey. Additionally, 7.2% intended to start in 2019, and 1% said they will start in 2020 or later.

The survey asked respondents who are intending to start farm to ECE activities to share factors affecting their decisions to start. When combining responses for “very important” and “somewhat important,” the factors “teaching children about where food comes from and how it is grown” (93.9%) and “providing children with experiential learning” (93.9%) emerged as the most important, followed by “access to fresher or higher-quality food” (93.8%), “improving children’s health” (93.5%), and “support local economy and community” (92.1%) as the top factors affecting why sites wanted to start farm to ECE in their settings (Figure 3).

Figure 2. ECE Provider Duration of Participation in Farm to ECE Activities

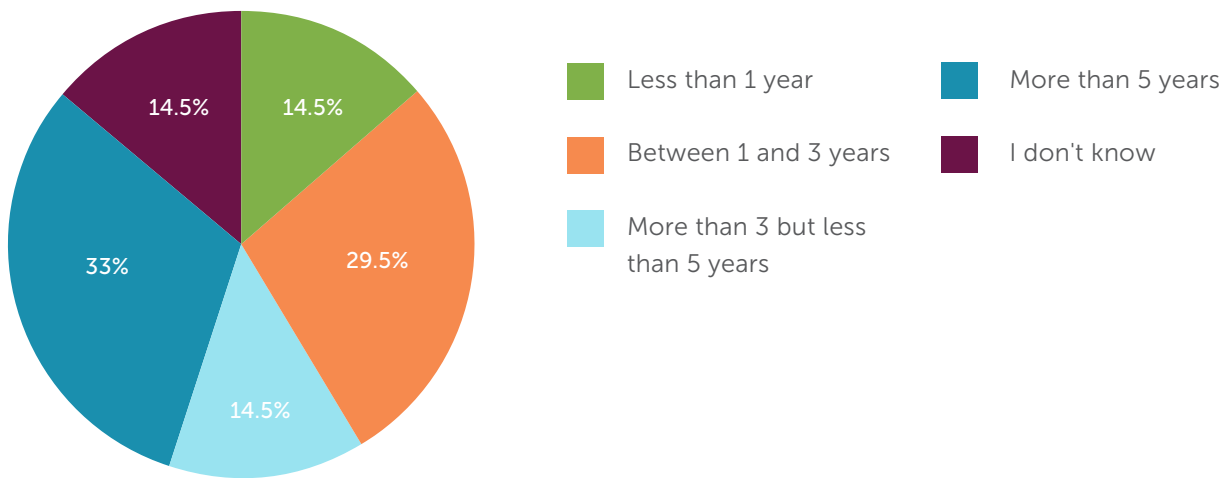
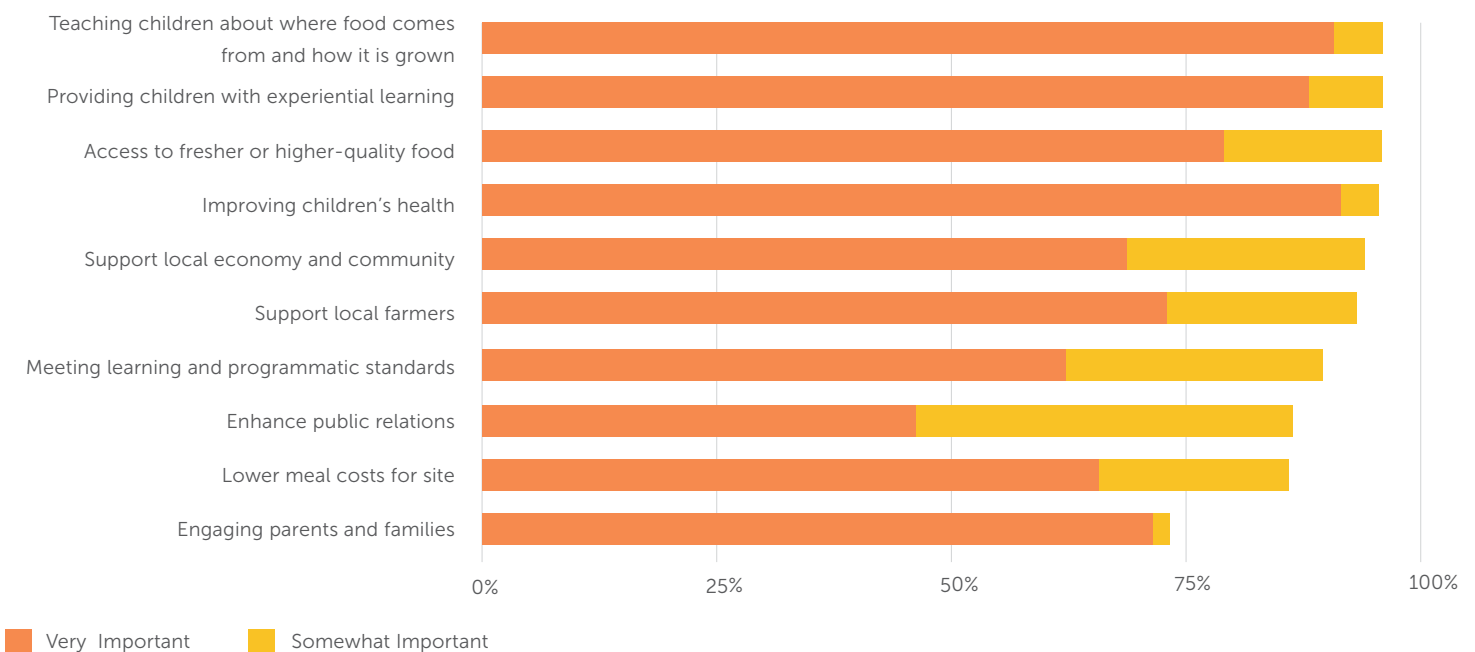


Figure 3. Motivations to Start Farm to ECE Activities

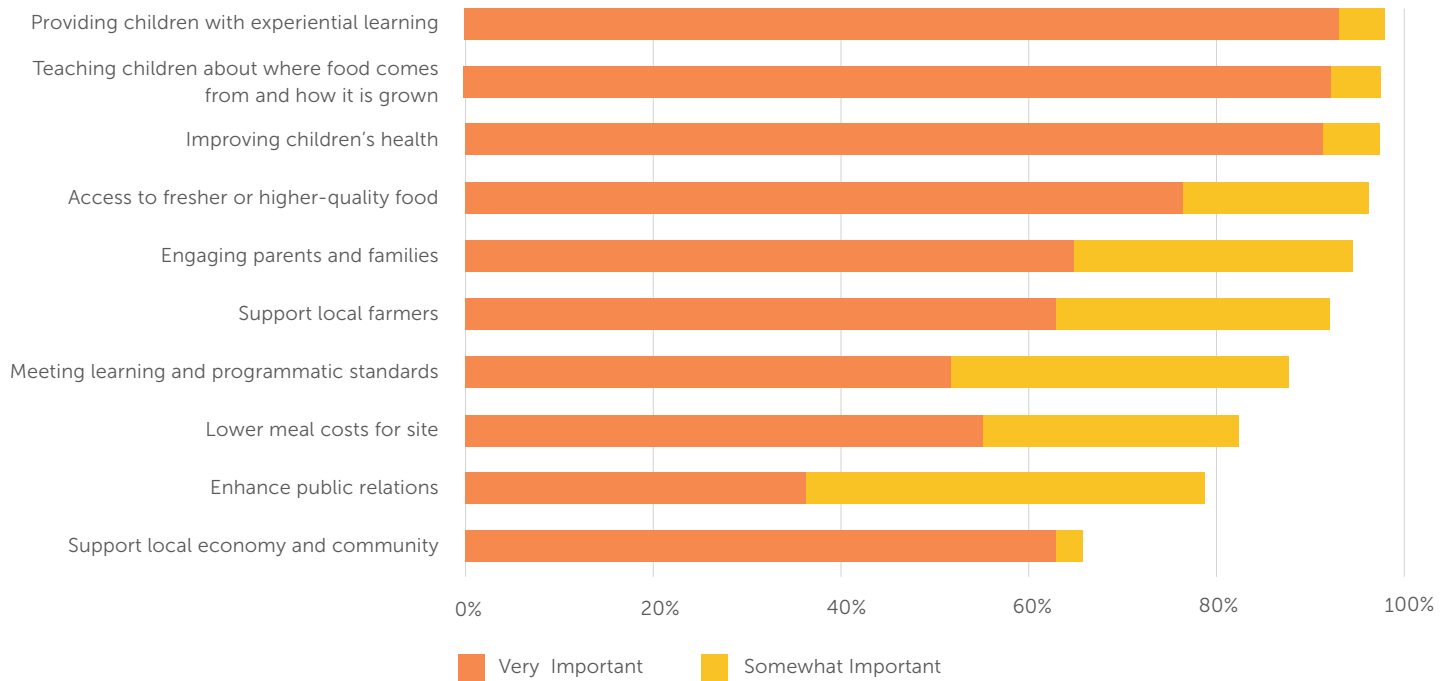




**Motivations for farm to ECE participation.** ECE providers who already engaged in farm to ECE activities shared their motivations for engaging in these types of activities, with 95.5% of providers indicating that teaching children about where food comes from and how it is grown was “very

important” or “somewhat important” (Figure 4). Other top reasons included providing children with experiential learning (95.1%), improving children’s health (94.9%), access to fresher or higher quality food (93.7%), engaging parents and families (92.1%), and supporting local farmers (89.7%).

Figure 4. Motivations for Engaging in Farm to ECE Activities



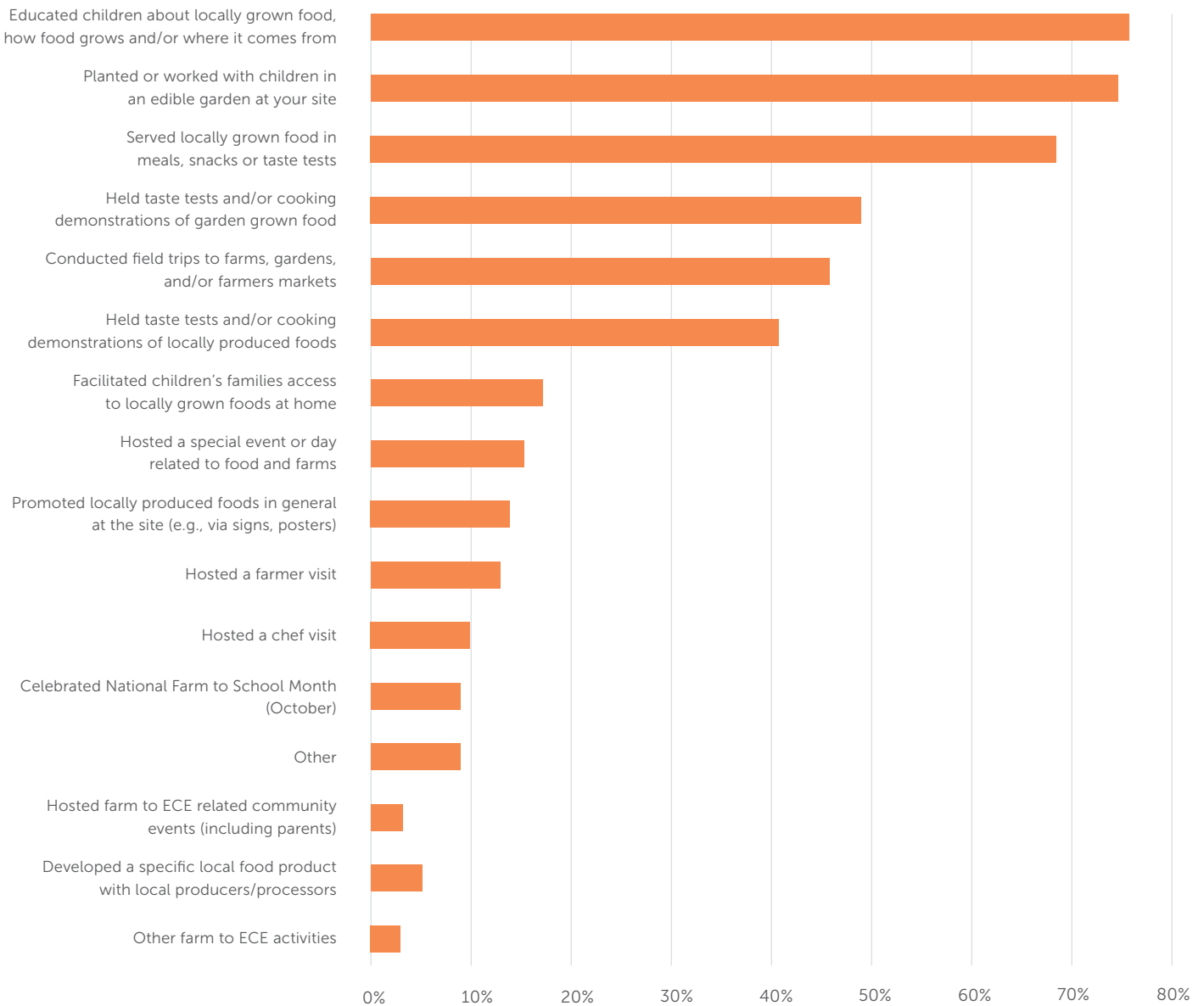
Credit: Little Ones Learning Center, Linden Tree Photography



**Farm to ECE activities.** Respondents already engaged in farm to ECE also shared the types of farm to ECE activities in which they engaged, with 76.2% indicating that in the last 12 months, they educated children about locally grown food, how food grows, and/or where it comes from (Figure 5). Almost as many (75.1%) indicated

that they planted a garden or worked with children in an edible garden on-site, and 68.9% served locally grown food in meals, snacks, or taste tests. Almost half (49.3%) held taste tests and/or cooking demonstrations of garden-grown food, and almost half conducted field trips to farms, gardens, and/or farmers markets (46.1%).

**Figure 5. Farm to ECE Activities Conducted by Providers**



**Gardens in ECE settings.** Of farm to ECE participating sites, a large number reported that they currently had an on-site edible garden (636 respondents or 63.5%) or that they previously had an on-site edible garden (145 respondents or 14.5%), with an additional 37 (3.7%) indicating that they never had one or were not interested. A majority of sites indicated the garden was used for taste testing (61.6%) and classroom lessons/curricula (60.5%). Fewer gardens were used to produce food to supplement program meals (38.0%) or to produce food for children to take home (32.5%).

**Stakeholder feedback.** Respondents reporting engagement in farm to ECE activities were asked about feedback from various stakeholder groups in response to their farm to ECE activities. They indicated that they received positive feedback (see Table 11), specifying that positive or very positive feedback was received from children (81.9%), from parents (72.9%), and from ECE staff (62.3%). Respondents reported that ECE administration also provided positive or very positive feedback to a lesser extent (53.1%), with community members (35.3%) and farmers/producers (28.7%) rounding out the list.

**Table 11. Respondents’ Reported Feedback From Different Groups About Farm to ECE<sup>a</sup>**

Source	Frequency of Reported Positive Feedback <sup>b</sup>	Percentage Reporting Positive Feedback <sup>b</sup>
Children	821	81.9%
Parents	730	72.9%
ECE staff	624	62.3%
ECE administration	532	53.1%
Community members	354	35.3%
Farmers/producers	288	28.7%

<sup>a</sup>N = 1,002.

<sup>b</sup>Five-point scale was used; frequency includes both positive and very positive feedback.

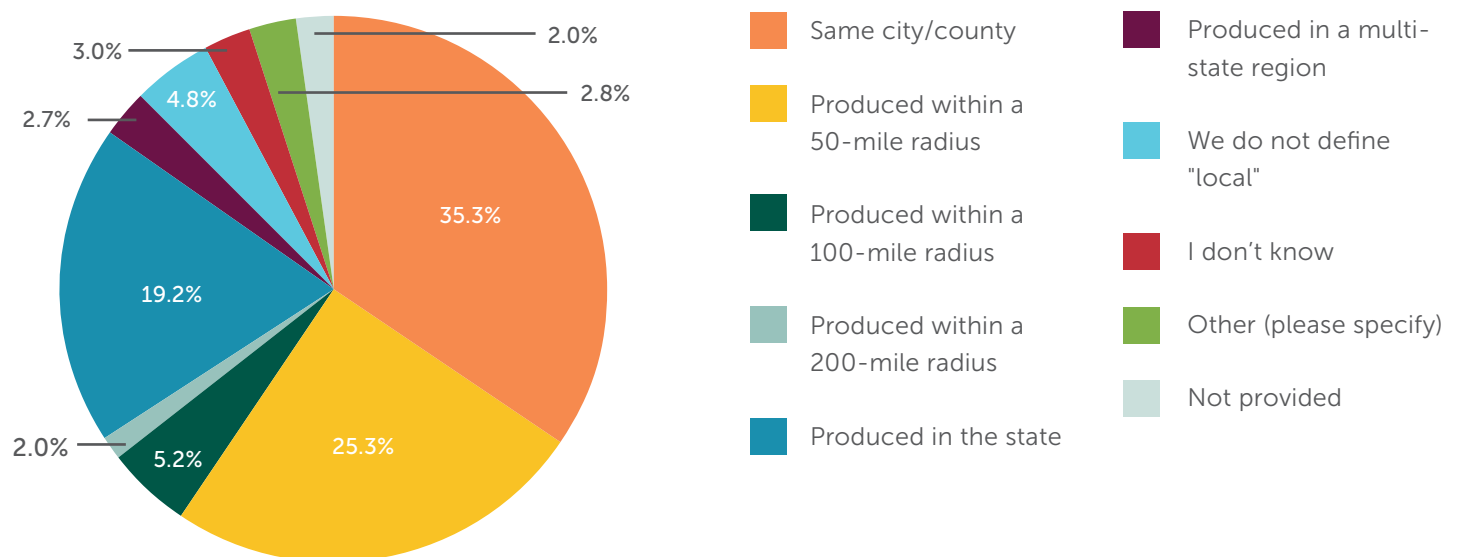
## Local Foods in Early Care and Education Settings

Procurement, or the purchasing of local foods and the subsequent serving of those foods for meals, snacks, and taste tests, is one of the core elements of farm to school as defined by NFSN. Purchasing practices can vary widely across ECE sites.

**Defining local food.** Understanding how ECE providers define local food was part of the 2018 survey, as it was

in the previous surveys. Respondents (n = 717) indicated their definition of “local” from a selection of geographical choices. Responses indicated that 35.3% define local as within the “same city/county,” another 25.3% reported that “local” means “within a 50-mile radius”, and 19.2% reported that they define “local” as “within the state” (see Figure 6).

**Figure 6. Respondents’ Definition of Geographically “Local”**



**Food purchasing.** The 2018 survey asked participants about total food purchases as well as food purchases from local sources. For those participating in farm to ECE, 717 (75.2%) indicated that they purchased local foods (see Table 12), 181 (8.9%) indicated that they did not, and 55 (5.8%) did not know. Respondents' total food purchases averaged \$25,906 in the last 12 months, with an average

of \$4,490 of those purchases coming from local sources (Table 13). When weighting the means of the two types of purchases (keeping total food purchases linked to local food purchases), the result is that 34.6% of a site's total food budget was spent on local food. Of respondents participating in farm to ECE, 54.0% anticipated increasing local food purchasing in the next 2 to 3 years.

**Table 12: Frequency of Purchasing and Serving Local Food**

Response	Frequency <sup>a</sup>	Percentage of Farm to ECE participating respondents
Yes	717	75.2%
No	181	19.0%
I don't know	55	5.8%
Total	1,002	100.0%

<sup>a</sup>N = 1,002.

**Table 13. Total Food and Local Food Purchased in the Last 12 Months by ECE Providers Purchasing Local Food<sup>a</sup>**

Food Purchases in the Last 12 Months	Mean
Amount spent on local food	\$4,490.19
Total amount spent on food	\$25,905.54
Percentage of food purchasing dollars spent on local food <sup>b</sup>	34.6%

<sup>a</sup>N = 527.

<sup>b</sup>Percentage is calculated as a weighted average for both local food and total purchases, keeping total food purchases linked to local food purchases.

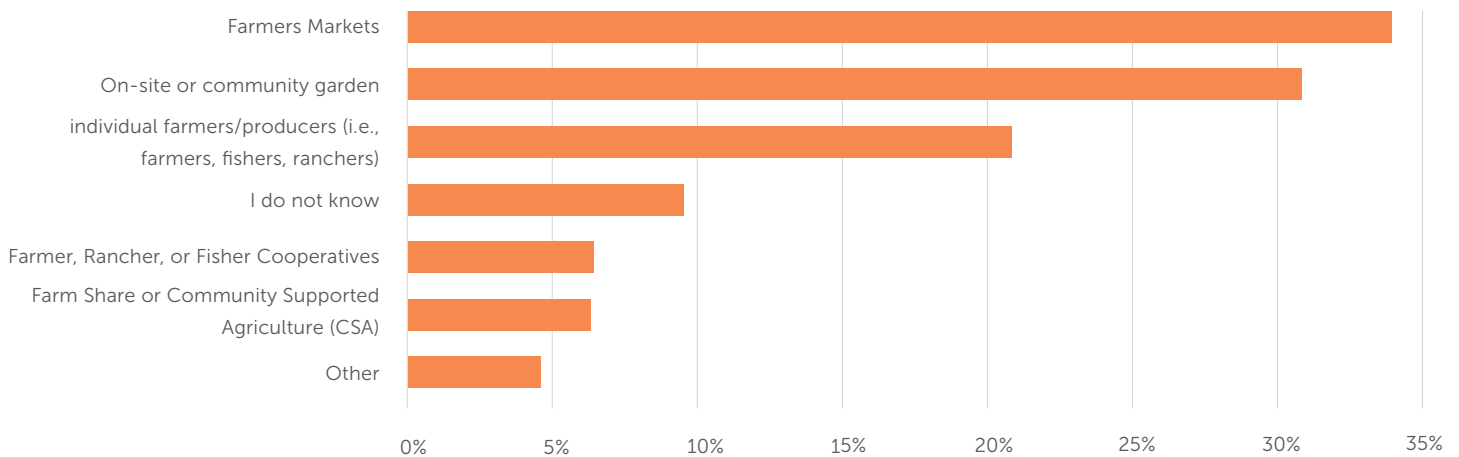
Credit: Little Ones Learning Center, Linden Tree Photography



**Purchasing local foods.** Respondents were also asked about their local food purchasing practices, including purchases from direct sources (Figure 7), such as individual farmers or producers, on-site or community gardens, farmers markets, or farm shares or community supported agriculture (CSA), and intermediate sources (Figure 8), such as distributors, grocery stores, or food hubs. Of those purchasing local (n = 717), one-third purchased food directly from farmers markets (33.9%). Other sources

included procurement from on-site or community gardens (30.8%) and individual farmers or producers (20.8%). From intermediate sources, ECE sites were most likely to list “other” (74.3%) as a source for local foods, but include specific names of grocery stores/retail outlets or as well as food banks and school systems as specific examples. Respondents also indicated they procured local foods from distributors (17.4%), grocery stores/retail outlets (8.9%), or food processors or manufacturers (8.1%).

**Figure 7. Sources for Purchasing Local Foods From Direct Sources**



**Figure 8. Sources for Purchasing Local Foods From Intermediate Sources**

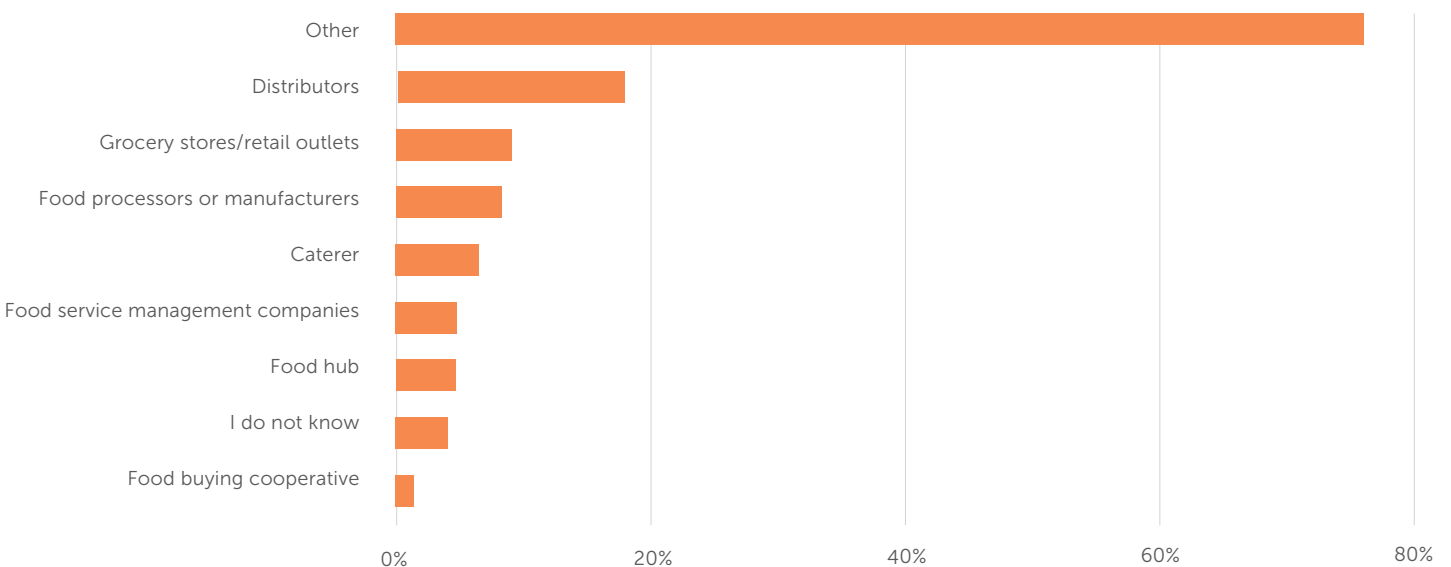
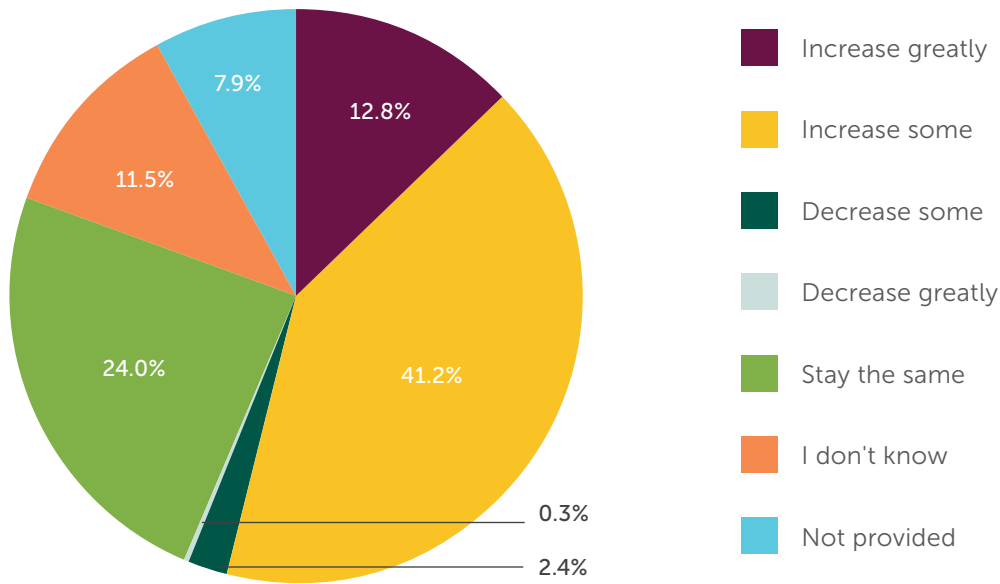


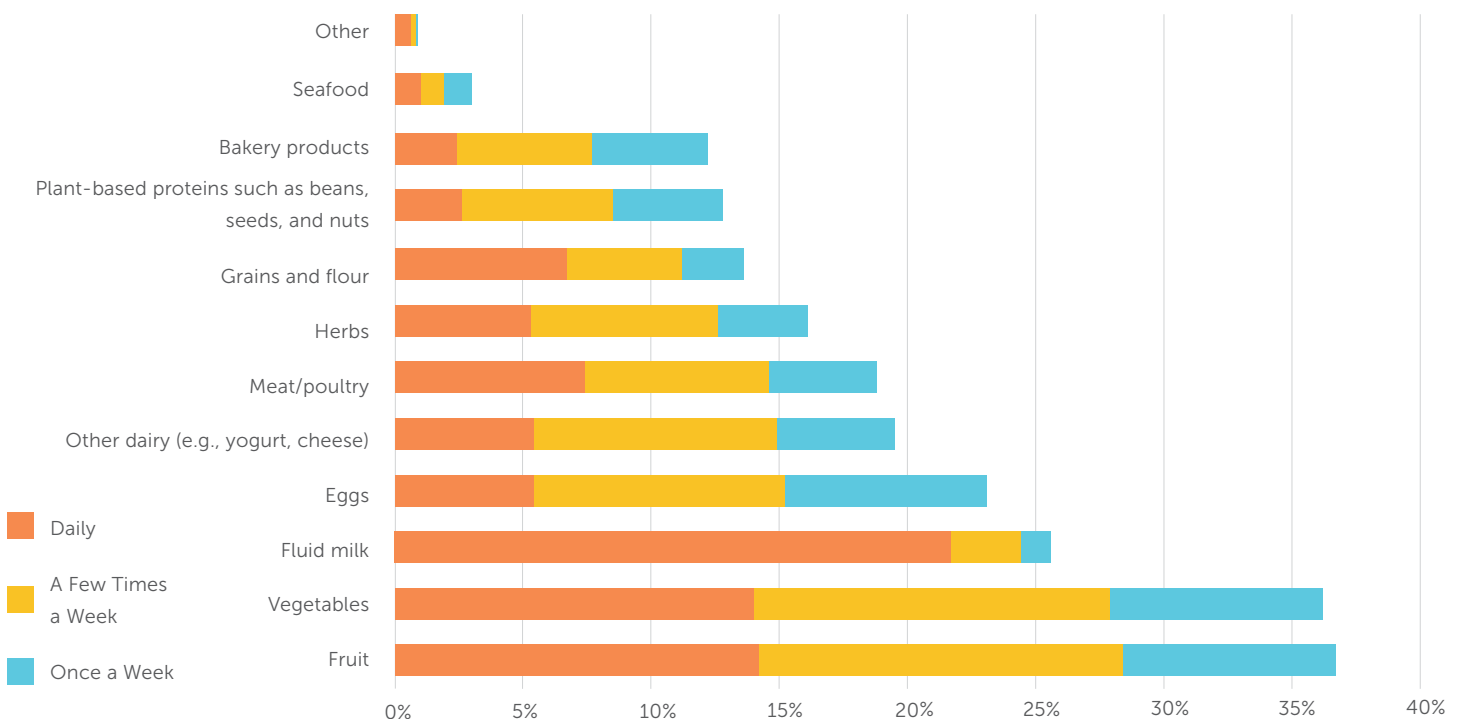
Figure 9. Anticipated Change in Purchasing Local Food in the Next 2–3 Years



The survey asked providers to project future procurement plans, indicating the likelihood of a change in purchasing from local sources. Among respondents, 12.8% indicated that they anticipate their local food purchasing to increase greatly, and 41.2% anticipated that their procurement of local foods will increase some. Nearly one-quarter (24%) anticipated that their local food purchases will stay the same (Figure 9).

The survey also asked about the frequency of serving local products at ECE sites (Figure 10). Respondents shared milk as the most frequently served local product, with 21.7% of respondents reporting that local milk was served daily. Fruit (14.2%) and vegetables (14.0%) were the next most frequently served food types, as reported by respondents who procure local products as part of meals and snacks (n=717).

Figure 10. Frequency of Serving Types of Local Food Products



## Food Preparation

Respondents were asked to report the frequency with which they served food prepared from scratch at their site (see Table 14). For all respondents, more than a third (39.6%) indicated that food is prepared from scratch daily; 16.6% prepared food from scratch a few times per week; and almost 5% prepared food from scratch once per week (4.7%) or once per month (4.4%). The responses to this question are comparable for all respondents and for respondents who indicated they participate in farm

to ECE, although daily preparation of food from scratch is slightly higher for the farm to ECE participants. Among participants indicating they implement farm to ECE practices (Figure 11), food prepared from scratch was served daily by almost half of respondents (45.5%). An additional 16.1% served food prepared from scratch a few times per week. However, there are sites that do not have on-site preparation of food (7.6%) or never serve food prepared from scratch (3.4%).

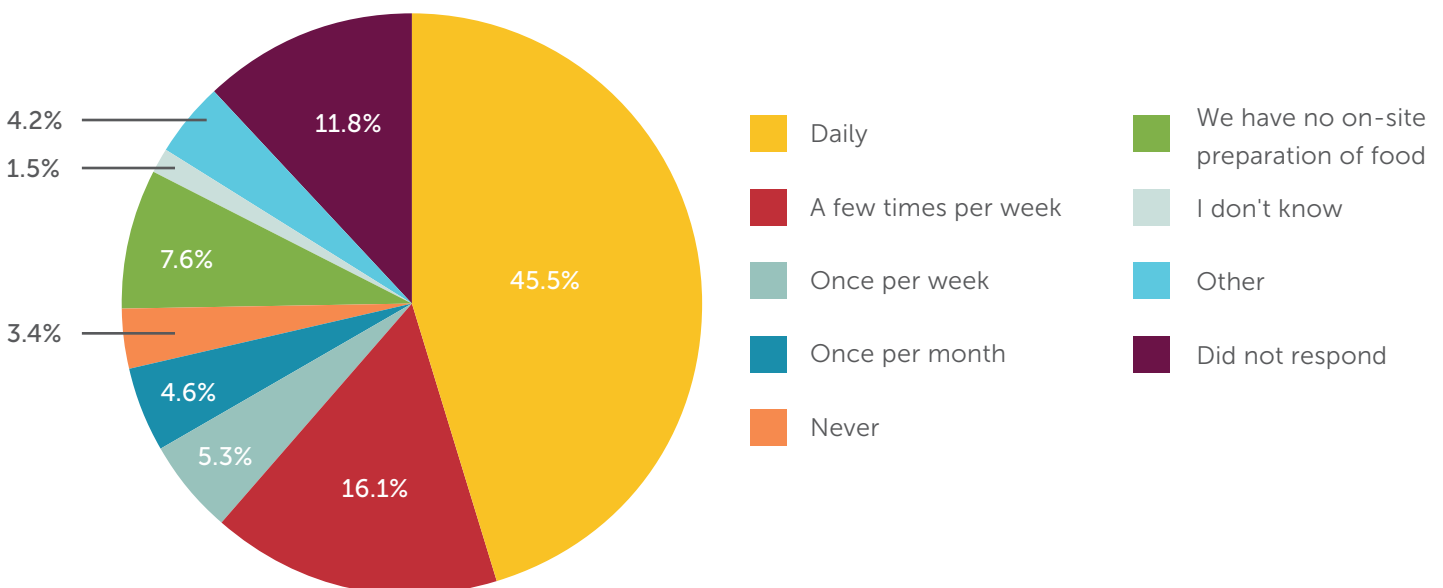
Table 14. Frequency of Preparing Food From Scratch

How Often	Total <sup>a</sup>		Farm to ECE <sup>b</sup>	
	Frequency of Response	Percentage	Frequency of Response	Percentage
Daily	804	39.6%	456	45.5%
A few times per week	337	16.6%	161	16.1%
Once per week	96	4.7%	53	5.3%
Once per month	90	4.4%	46	4.6%
Never	124	6.1%	34	3.4%
We have no on-site preparation of food	172	8.5%	76	7.6%
I don't know	26	1.3%	15	1.5%
Other (please specify)	69	3.4%	43	4.2%
<b>Total responses</b>	<b>1,718</b>	<b>84.6%</b>	<b>884</b>	<b>88.2%</b>
Did not respond	312	15.4%	118	11.8%

<sup>a</sup>N = 2,030.

<sup>b</sup>N = 1,002.

Figure 11. From-Scratch Food Preparation for Sites Participating in Farm to ECE

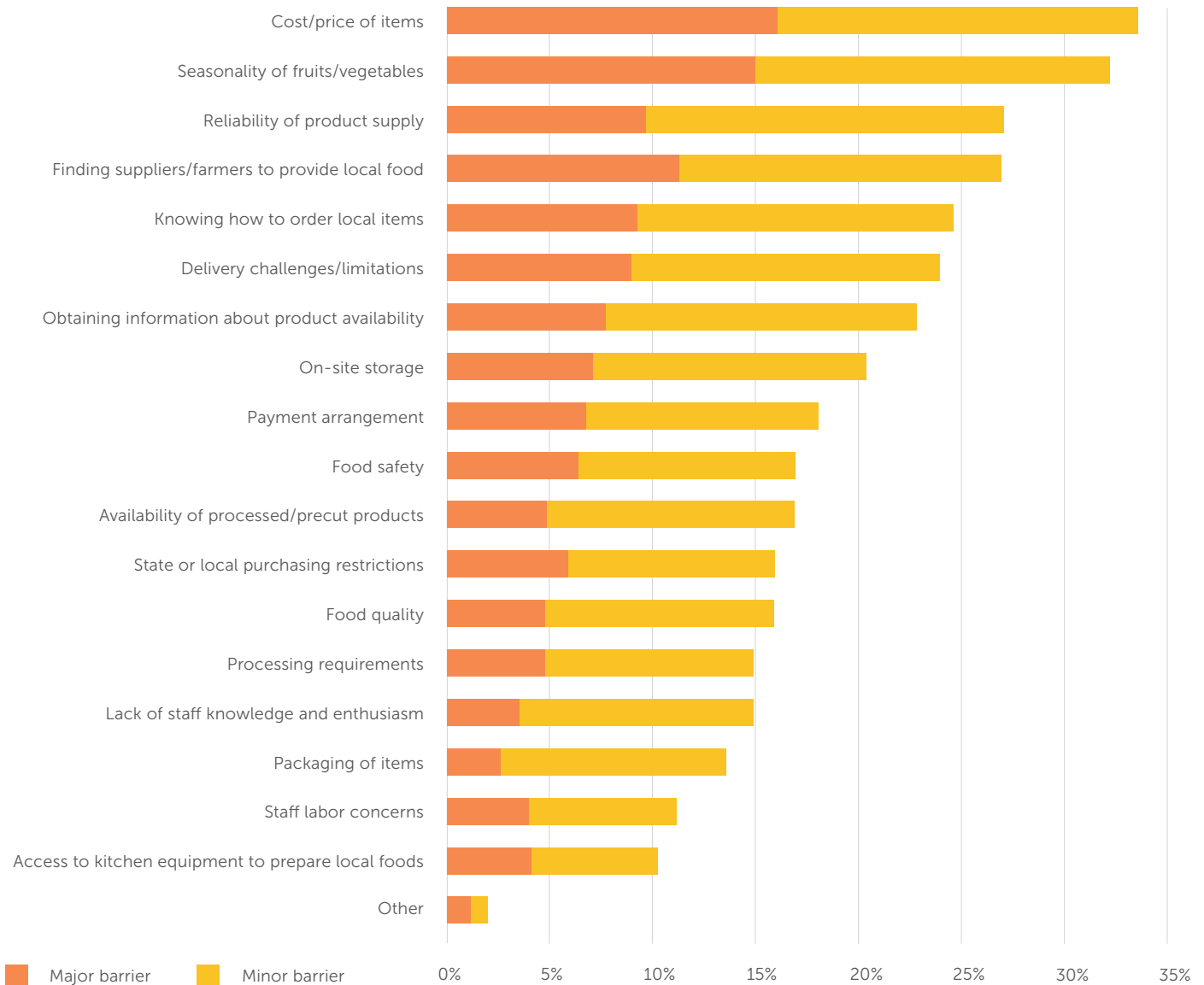


## Barriers to Farm to Early Care and Education

When combining responses naming major and minor barriers to purchasing/procuring local products, cost emerged as the most frequently cited barrier (33.3%), as shown in Figure 12. Seasonality of fruits and vegetables (31.9%), followed by reliability of supply (26.9%), finding suppliers/farmers to provide local food (26.7%), and knowing how to order local items (24.4%) rounded out

the top five barriers. Respondents also named internal site issues, such as on-site storage (20.2%), lack of staff knowledge and enthusiasm (14.8%), staff labor concerns (11.1%), and access to kitchen equipment (10.2%). It is important to identify availability and distribution issues in contrast to challenges arising from the infrastructure of the settings themselves.

Figure 12. Barriers to Purchasing/Procuring Local Products for ECE Sites



When asked about barriers to other farm to ECE activities such as on-site gardens and local food, agriculture, and nutrition education (see Table 15), respondents already participating in farm to ECE most often reported limited funding for supplies (67.7%). More than half (51.3%) of

respondents indicated limited staff time to develop and implement lessons as a barrier. Nearly half of respondents reported limited staff knowledge of gardening (48.0%) and limited staff knowledge on local foods (47.4%) as either a major or minor barrier as well.



Table 15. Barriers to Farm to ECE Activities Among Providers Already Participating in Farm to ECE Activities<sup>a</sup>

Barrier	Frequency	Percentage
Limited funding for supplies	678	67.7%
Limited staff time to develop and implement lessons	514	51.3%
Limited staff knowledge of gardening	481	48.0%
Limited staff knowledge on local foods	475	47.4%
Limited parent interest and engagement	459	45.8%
Lack of outdoor space	420	41.9%
Limited staff knowledge about nutrition education	405	40.4%
Limited access to appropriate curriculum or lesson plans	402	40.1%
Limited staff interest and engagement	373	37.2%
Any other important reasons (please list)	246	24.6%
Local or state policy restrictions (please specify programmatic, local, or state policy restrictions)	166	16.6%
Programmatic restrictions (please specify)	159	16.0%

<sup>a</sup>N = 1,002.

Participants who were not already engaged in farm to ECE were also asked about potential barriers to engaging in farm to ECE (see Table 16). Respondents shared limited funding for supplies (72.3%) as the primary reason for not implementing farm to ECE activities. Limited staff

knowledge of gardening (61.0%), limited staff knowledge on local foods (59.9%), limited staff time to develop and implement lessons (59.4%), and limited parent interest and engagement (58.9%) were the next most frequently cited major and minor barriers to implementation.

Table 16. Barriers to Farm to ECE Activities Among Providers Planning to Start Participation in Farm to ECE Activities<sup>a</sup>

Barrier	Frequency <sup>b</sup>	Percentage
Limited funding for supplies	442	72.3%
Limited staff knowledge of gardening	373	61.0%
Limited staff knowledge on local foods	366	59.9%
Limited staff time to develop and implement lessons	363	59.4%
Limited parent interest and engagement	360	58.9%
Limited access to appropriate curriculum or lesson plans	345	56.5%
Limited staff knowledge about nutrition education	330	54.0%
Lack of outdoor space	317	51.9%
Limited staff interest and engagement	287	47.0%
Local or state policy restrictions (please specify)	81	13.3%
Programmatic restrictions	76	12.4%
Other barriers	18	2.9%

<sup>a</sup>N = 611.

<sup>b</sup>Frequency includes both major and minor barrier.

## Necessary Resources for Farm to Early Care and Education

**Curricula in farm to ECE.** In considering farm to ECE curricula used among respondents implementing farm to ECE activities, almost one-fifth (19.8%) were using some form of curriculum (n = 1,002). Table 17 shows that 20.2% of respondents indicated they developed and were using their own curriculum for farm to ECE activities,

with an additional 16.2% using Grow It, Try It, Like It and 10.6% using Farm to Preschool. A number of other curricula were being used as well, including Creative Curriculum (5.6%), CACFP (3.5%), and Early Sprouts (3.0%). Participants also listed a variety of resources once; these are not listed in Table 17.

Table 17. Farm to ECE Curricula Used by Providers<sup>a</sup>

Curriculum Name	Frequency	Percentage
Developed our own	40	20.2%
Grow It, Try It, Like It	32	16.2%
Farm to Preschool	21	10.6%
Creative Curriculum	11	5.6%
CACFP	7	3.5%
Early Sprouts	6	3.0%
Our Children, Our Families	5	2.5%
USDA My Plate	5	2.5%
USDA resources	5	2.5%
Cooperative Extension	4	2.0%

<sup>a</sup>N = 198.

Credit: Little Ones Learning Center, Linden Tree Photography



**Funding for Farm to ECE.** For respondents indicating on the 2018 survey that they participated in farm to ECE activities, only 8.3% reported receiving external funding (e.g., funding from state/federal sources or foundations) to support their farm to ECE activities. Of the 524 respondents who answered whether they received external funding, 76.5% did not receive any funding in the past 12 months, and 22.4% received less than \$5,000. The overall average amount of funding received was \$2,905. The mean amount of federal funding received by respondents was \$1,759, state funding was \$1,988, and local funding was \$4,407 (see Table 18).

Survey respondents also shared their participation in CACFP (see Table 19). Just over half of respondents participating in farm to ECE indicated that they were receiving CACFP funds (55.4%), and less than a third (30.1%) did not participate in the program. Less than 3% did not know if their programs were accessing these funds. The survey also asked participants whether they received additional reimbursement for locally sourced food items (see Table 20). A majority of respondents participating in farm to ECE (77.0%) indicated they did not receive additional reimbursement for local foods. Only 2.8% indicated that they did receive additional reimbursement for locally sourced food items (Table 20).

Table 18. External Funding Sources for Farm to ECE Activities<sup>a</sup>

External Funding Source	Frequency	Sum	Mean
Federal	22	\$38,222.00	\$1,759.09
State	64	\$115,324.00	\$1,987.66
Local	61	\$252,207.00	\$4,407.31
In-kind donation	84	\$171,890.00	\$2,215.25
Other	95	\$45,171.00	\$648.17

<sup>a</sup>N = 1,002.

Table 19. Farm to ECE Sites Participating in CACFP<sup>a</sup>

Response	Frequency	Percentage
Yes	555	55.4%
No	302	30.1%
I don't know	29	2.9%
Did not respond	116	11.6%
Total	1,002	100.0%

<sup>a</sup>N = 1,002.

Table 20. Farm to ECE Sites Receiving Additional Reimbursement for Locally Sourced Food<sup>a</sup>

Response	Frequency	Percentage <sup>b</sup>
Yes	28	2.8%
No	771	77.0%
I don't know	86	8.6%
Did not respond	117	11.7%
Total	1,002	100.1%

<sup>a</sup>N = 1,002.

<sup>b</sup>Due to rounding, percentages may not add up to 100.

## Discussion

The 2018 National Farm to Early Care and Education Survey reveals that farm to ECE activities are taking place in 45 states and Washington, DC. Based on the results of this survey, it appears that children across the United States are eating local foods, participating in garden activities, and learning about the origins of their food and how it is grown. Children are participating in farm to ECE across all types of programs and in different geographic areas.

## Future Data Collection Needs

Although the current survey iteration is the first attempt at a purposive sample, it also revealed the fragmentation within the ECE system as far as the lack of publicly available means of communicating with ECE providers. In other words, there was not a consistent method to invite providers to participate across states, limiting the data collection. It is also important to note that there is not representation from all US states or from any US territories, despite the efforts of the research team to obtain emails or elicit participation by other means.

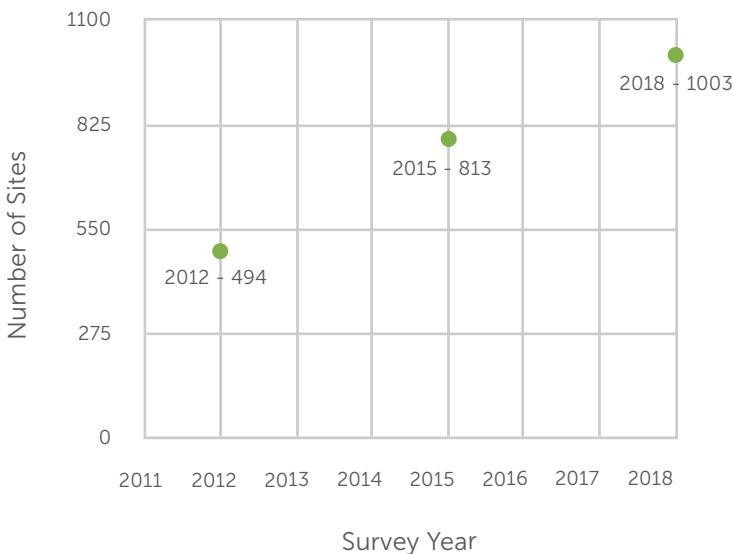
The 2012 and 2015 surveys employed a different methodology than the 2018 version, which makes it difficult, if not impossible, to compare the 2018 version to previous iterations. The 2012 and 2015 versions used a snowball sample to invite participants to complete the survey, which may have resulted in a higher proportion of responses from providers who were already connected to

the farm to ECE movement. The purposive sample used in the 2018 survey was deliberately chosen to improve the representation of ECE providers in the sample and ensure a broad selection of licensed and license-exempt providers, as well as those providing care in family-based and center-based settings, schools, Head Start settings, and tribal ECE settings.

The research team intended to provide a more robust analysis with the sample while acknowledging that comparisons to the results of previous surveys would be limited. This change in methodology increased rigor but limited the capacity to see the change in reach and scope of farm to ECE. For instance, although the percentage of respondents reporting farm to ECE activities in the 2018 survey is lower than the percentage in the 2015 survey, the 2018 sample is a more representative and slightly larger sample of ECE providers. Additionally, the number of states represented by farm to ECE participating respondents decreased, likely because of the lack of 2018 survey distribution in specific states and US territories.

Although data from the 2012, 2015, and 2018 surveys cannot be directly compared, each survey demonstrates the best available data on farm to ECE participation at the time of the survey (Figure 13). This challenge in identifying change and growth over time points to the need for continued and consistent, high-quality data collection in the field in the coming years. To better reach the large and diverse ECE practitioner population, future data collection may need to include collaboration with federal or state agencies.

Figure 13. Reported Farm to ECE Sites (As Reported in National Survey)<sup>a</sup>



2012: Snowball sampling, including only farm to ECE participating sites

2015: Snowball sampling, including participating and non-participating sites

2018: Purposive sampling, distributed to lists of licensed and license-exempt providers

<sup>a</sup>National surveys conducted in 2012, 2015, and 2018.

In addition to continued, thorough monitoring of farm to ECE reach, opportunities also exist for high-quality farm to ECE outcome research. Although national survey data has indicated providers' motivations for participating in farm to ECE, we have limited research documenting the outcomes of farm to ECE initiatives. Significant gaps in the literature exist around the impact of farm to ECE initiatives on child health indicators (e.g., food neophobia, fruit and vegetable intake), child and family food access, and the quality of the ECE setting. Filling these gaps in research will provide an evidence base for the motivations that providers already identify.

### **Alignment With Early Care and Education Priorities**

Respondents' motivations for farm to ECE engagement and reported farm to ECE activities indicate an alignment with and use of farm to ECE initiatives to address ECE priority areas. These survey results show that improving children's health is a frequently selected longer-term motivation of those participating in farm to ECE or planning to participate. The remaining top motivators match the core elements of farm to school: education, school gardens, and procurement. Education and gardens—two of the three core elements of farm to ECE and the top two reported farm to ECE activities—go hand in hand with indicators of high-quality ECE environments and experiential education approaches. Food, agriculture, and nutrition education activities can support high-quality experiential learning and the development of healthy eating habits. The majority of survey respondents participating in farm to ECE indicated that they currently have or once had an on-site edible garden and that those gardens were most often used for educational activities such as taste testing and classroom lessons.

Currently, a wide variety of educational activities exist to support providers in using gardening and food, agriculture, and nutrition education to achieve early learning standards. Curricula, particularly those based on evidence-based practices and/or those based on research, can be helpful in the implementation of nutrition education activities for ECE providers. As awareness of and interest in farm to ECE continues to increase across the United States, it will result in greater demand for information, training and technical assistance, financial support, and informal and formal policy provisions to both initiate and continue to support activities in ECE settings. In the long run, some elements of today's ECE culture must also shift to support the sustainability of these initiatives and their

effectiveness in capitalizing on providers' motivations and empowering them to participate in farm to ECE. Cultural shifts may include increased wages and support for the ECE workforce and a shift to prioritization of health and recognition of the importance of high-quality meals.

### **Addressing Barriers to Advancing Farm to Early Care and Education**

Survey respondents who were already participating in farm to ECE activities did indicate some limitations that have the potential to affect their efficacy and sustainability over time. Although funding for supplies seems to be a common structural issue for ECE sites that is best addressed by legislative policy, limited staff knowledge about gardening and local foods can begin to be addressed through non-legislative policy and practice solutions within ECE licensing and state-level systems. Because survey respondents also considered limited staff time a barrier, the most effective way to address the education needs of ECE staff is by applying farm to ECE principles and integrating farm to ECE into training that is already required of ECE staff, such as health and safety training or CACFP annual training.

Limited parent interest and engagement was also a notable barrier cited by a large proportion of respondents. This barrier is particularly significant not only because family engagement was also reported as a motivation for farm to ECE participation by respondents already participating in farm to ECE as well as those planning to start, but also because family engagement is such a vital part of high-quality ECE. ECE providers can be supported in overcoming this barrier and capitalizing on that motivation with education and tools to implement farm to ECE in ways that engage families and meet each family's capacity for participation. For example, holding a taste test or offering an on-site market at pick-up time offers engagement for parents who do not have time to be in the classroom for daytime activities. Offering families the option to take home recipes and complete activities at home, thereby fulfilling family engagement requirements that Head Start and other programs may have, provides flexibility and reinforces the farm to ECE content offered in the classroom.

For local food procurement, some of the top barriers can be fairly easily and directly addressed through local technical assistance and education. Technical assistance providers, including those who are members and supporters of NFSN, could assist providers with identifying

food suppliers and/or farmers in the area who may be interested in marketing their products to ECE sites and helping them navigate processes for procuring and ordering local foods. Tapping into existing national and state networks and supporting the development of new state farm to ECE networks can increase provider access to and relationships with supportive stakeholders. Some NFSN Core and Supporting Partners are Cooperative Extension staff members who are in an ideal position to provide education about local food production and connections to local farms, given their connection to land grant universities and, often, their embeddedness in local regions or communities. To adhere to the true community-based approach of farm to ECE, definitions of “local” should be dependent on those provided by ECE sites themselves, but survey results indicate that the most frequently used definition of local is “within the same city/county,” followed by “within a 50-mile radius.”

Although some of the local food vendors identified as potential suppliers may already be selling to nearby K–12 schools and districts, farm to ECE may represent a unique opportunity for small and beginning farmers who seek a steady market outlet and scale-appropriate experience with wholesale marketing to institutional buyers. ECE sites may also benefit from partnering with K-12 school districts, purchasing from the district or adding the ECE sites order onto the districts order in order to leverage the districts purchasing power. The ECE sites that serve an especially small number of children may also be a good fit for CSA or farm share membership. A number of websites, both national and state-level in scope, that are free to use allow technical assistance providers and/or ECE providers themselves to search for local farms in their area. For example, LocalHarvest (<https://www.localharvest.org>) is national in scope and lists farms, CSAs, and farmers markets in a searchable geographic area, and MarketMaker (<https://foodmarketmaker.com>), which currently covers only 20 states, is an online space for buyers and sellers of local and specialty foods to connect. However, as the survey results show, many farm to ECE providers who have been purchasing local foods are already using one of the best community resources to find local farmers—farmers markets.

More education specifically about milk as a local agricultural product available year-round could lead to an easy win for local food procurement at ECE sites. Respondents who already purchased local foods indicated that milk was the local food product most frequently served daily. This result seems to point to the general

tendency of serving milk regularly in ECE environments, in part due to CACFP requirements to do so. Providers who are not yet reporting that they purchase local milk might not know that milk tends to be local by nature. Milk is often marketed regionally, given its perishability and the cooperative structure that tends to support milk sales and distribution. For providers, knowing whether milk is local and tracking it as a local food product can be as simple as knowing the appropriate two-digit state code on a milk container. Identifying milk as local can open up opportunities for education (e.g., field trips to the dairy, visits from a farmer) and may motivate providers to start to explore additional local food options.

Seasonality of local agricultural products is a barrier that varies in severity across the United States and territories as it is based on the seasonal fluctuations of weather patterns. As such, seasonality is not easy to eliminate as a barrier to local food purchasing in colder climates, but it can at least be limited in places where farmers are able to purchase and construct greenhouses or more affordable hoopouses (passive solar greenhouses) and produce more local foods through the colder seasons. It is also important to identify availability and distribution issues in contrast to challenges arising from the infrastructure of the settings themselves. Education about the seasonality of fruits, vegetables, and herbs local to ECE sites, including those available field fresh, through season extension, and/or through storage throughout the year, can help ECE staff better understand and seek these foods when they are most widely available and, typically, the most affordably priced. Providers seeking to increase local purchases would also benefit from education on local products other than fruits and vegetables that may be available year-round, such as meats, grains, and legumes. In any case, more seasonal, scale-appropriate recipes, including those that meet CACFP nutrition standards and meal patterns, and training on the value of serving local foods and how to prepare them (including scratch preparation) should be made available to ECE staff to contribute to a longer-term culture shift of tracking, preparing, and serving foods local foods throughout the year or when ECE sites are open.

As experience has shown for both farm to school and farm to ECE, legislative policies can both serve as powerful tools at the local, state, and federal levels to address barriers and provide a more supportive environment that cultivates local food procurement, gardens, and/or food and agriculture education. Effective in early 2015, the Healthy Tots Act in Washington, DC, can serve as model legislation to be adapted in other states and territories. In DC, ECE

sites participating in CACFP are automatically eligible to receive increased reimbursements for meals and snacks with local food components through the Healthy Tots Act, which also provides resources for local food and wellness guidelines. In addition to Washington, DC, Hawaii and Vermont have also passed legislation to establish statewide farm to ECE programs within state agencies.<sup>17</sup> Four states—Oregon, Michigan, New York, and Washington, DC—have enacted reimbursement or incentive programs that provide schools with additional funds for serving local foods in school food service programs. The dollars set aside for these programs are considered to work twice; they help supply more healthy foods to schoolchildren and are reinvested in local food businesses and farms. Similar programs could be enacted or expanded to encourage more local foods in ECE food programs. Finally, as NFSN's State Farm to School Legislative Survey<sup>21</sup> showed, a variety of additional policies have been put in place in states across the country to support farm to school that could be adapted to include or address farm to ECE. These include farm to school coordinator positions, appropriated funding, and grant programs.

### **Implications for the Farm to Early Care and Education Movement**

The results of this survey provide implications and potential directions for future work to support the growth and institutionalization of the farm to ECE movement.

First, in order to promote consistent, high-quality future monitoring and research, leaders in the movement, such as NFSN and CRFS, need to develop collaborative relationships with federal and state agencies as well as national academic partners. This was particularly evident in disseminating the surveys and in differences and discrepancies across states and territories because there was no centralized distribution system. Specific, careful attention to coordinate efforts to secure a central repository within and among states for recruiting participants for research as well as sharing best practices can help address some of the research gaps noted earlier. In addition to needs assessment, assessment of outcomes and evaluation of farm to ECE initiatives must be conducted and shared in order to fill a gap in research and provide a base of evidence that demonstrates how farm

to ECE helps meet learning and programmatic standards, motivating factors for participating in farm to ECE.

Second, support and technical assistance has been identified as an important approach to overcoming many of the noted barriers. To increase access to resources and technical assistance, stakeholders should continue to be encouraged to tap into national (NFSN) and state networks. These networks can support providers in coordination and collaboration with other ECE stakeholders as well as food systems and K-12 stakeholders who may be able to support their efforts. Additionally, future resource creation should be targeted at identified needs, including continuing education opportunities for providers, family engagement tools, and procurement training. Resource creation should build on existing resources such as this survey and extant, although limited, farm to ECE research. Technical assistance and training can coordinate with and contribute to broader movements to offer high quality professional development opportunities to ECE providers and to increase the quality of ECE environments.

Third, legislative and administrative policy at the federal, state, and local levels is a potential key to addressing barriers and supporting institutionalization of farm to ECE. Because of the cross sectoral nature of farm to ECE, collaborative policy efforts must include diverse stakeholders and priority areas from ECE, food systems, and public health arenas. Stakeholders at the national and state levels can also continue to work together to identify advocacy opportunities and leverage points within existing policies, including state Quality Rating and Improvement Systems and state level farm to ECE systems work.

Finally, strategic collaborative efforts are vital to successfully leverage these identified opportunities, but the effectiveness of these endeavors must also be assessed with best practices shared to enable wider implementation of farm to ECE. Strategic partnerships include federal and state agency and academic partners to advance research, ECE advocacy and support organizations to advance policy and support change in ECE culture, and on-the-ground technical assistance partners for resource creation and direct programmatic support.

## Conclusion

The 2018 National Farm to Early Care and Education Survey improves upon the 2012 and 2015 survey data and provides a landscape view of the current status of farm to ECE across the country. The methodological challenges of the survey mirror the systemic fragmentation of the ECE system and point to the general challenge of reaching ECE providers with interventions such as farm to ECE.

The results presented here suggest a need for further analysis to better understand the opportunities as well as needs to expand and institutionalize farm to ECE across all types of settings. Additional analysis and research are also necessary to better understand the reach and impact of farm to ECE in communities of color and low-income communities. The results

presented suggest a need to evaluate the characteristics that facilitate farm to ECE activity and approaches to addressing the barriers specific to ECE sites.

The multiple, variable types of ECE settings present both opportunities and challenges in implementing farm to ECE. Further evaluation and analysis can assist in the development of key resources, training and technical assistance, and opportunities for advocacy to help meet the needs of the wide variety of ECE settings across diverse populations and communities, thus supporting a healthier future for more children and families.

Credit: Little Ones Learning Center, Linden Tree Photography





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## Appendix

Appendix 1: State-Level Data

## 2018 National Farm to Early Care and Education Survey - State-Level Data Sheet

State	Total Respondents	Total farm to ECE Sites	"Yes" farm to ECE (%)	Planning to Start farm to ECE (%)	Total Enrollment of farm to ECE Participating Sites	Sites that Started farm to ECE in the Past Year (%)	Sites Doing farm to ECE for Over 5 Years (%)	Most Frequently Reported Farm to ECE Activities*	Farm to ECE Sites Purchasing Local Food (%)	Farm to ECE Sites Anticipating Local Food Purchasing to Increase (%)
Alabama	16	6	37.50%	31.25%	1,295	33.33%	33.33%	B J	83.33%	66.67%
Alaska	7	3	42.86%	28.57%	91	0.00%	66.67%	F I J	100.00%	66.67%
Arizona	30	14	46.67%	33.33%	1,183	14.29%	42.86%	A I	50.00%	50.00%
Arkansas	22	10	45.45%	22.73%	922	10.00%	10.00%	A E	30.00%	20.00%
California	58	30	51.72%	32.76%	3,770	3.33%	43.33%	A F J	76.67%	63.33%
Colorado	48	29	60.42%	29.17%	989	10.34%	41.38%	A I J	93.10%	51.72%
Connecticut	2	2	100.00%	0.00%	240	0.00%	0.00%	A F I J	50.00%	50.00%
D.C.	9	6	66.67%	33.33%	147	33.33%	16.67%	I	83.33%	66.67%
Delaware										
Florida	100	38	38.00%	38.00%	4,673	18.42%	28.95%	A	65.79%	55.26%
Georgia	33	14	42.42%	36.36%	1,729	14.29%	14.29%	B I	57.14%	50.00%
Hawaii	21	15	71.43%	9.52%	415	13.33%	26.67%	A I J	73.33%	40.00%
Idaho	42	27	64.29%	21.43%	1,292	7.41%	40.74%	I J	77.78%	51.85%
Illinois										
Indiana	70	29	41.43%	38.57%	2,367	17.24%	27.59%	A I J	68.97%	55.18%
Iowa	167	86	51.50%	26.35%	2,540	16.28%	38.37%	A I J	83.72%	59.30%
Kansas	27	13	48.15%	40.74%	366	7.69%	15.38%	F I J	69.23%	69.23%
Kentucky	16	8	50.00%	18.75%	1,881	12.50%	25.00%	B E I	37.50%	61.45%
Louisiana	6	3	50.00%	33.33%	995	0.00%	0.00%	D	100.00%	33.33%
Maine	59	38	64.41%	23.73%	2,245	10.53%	52.63%	A I J	81.58%	57.9%
Maryland	50	26	52.00%	36.00%	2,750	23.08%	30.77%	I	57.69%	38.46%
Massachusetts	42	18	42.86%	30.95%	3,742	0.00%	38.89%	I	55.56%	44.44%
Michigan	94	35	37.23%	41.49%	2,360	8.57%	31.43%	J	74.29%	60.00%
Minnesota	20	9	45.00%	40.00%	676	11.11%	11.11%	I	33.33%	55.56%
Mississippi										

### \*Most Frequent Activities Key

- A: Planted or worked with children in an edible garden at your site
- B: Conducted field trips to farms, gardens, and/or farmers markets
- C: Hosted a farmer visit
- D: Hosted a chef visit
- E: Held taste tests and/or cooking demonstrations of locally produced foods
- F: Held taste tests and/or cooking demonstrations of garden grown food
- G: Celebrated National Farm to School Month (October)
- H: Hosted farm to ECE related community events (including parents)
- I: Educated children about locally grown food, how food grows and/or where it comes from

- J: Served locally grown food in meals, snacks or taste tests
- K: Worked with local producers/processors to develop a specific food product using local food for your site
- L: Promoted locally produced foods in general at the site (e.g., via signs, posters)
- M: Hosted a special event or day related to food and farm
- N: Facilitated children's families access to locally grown foods at home
- O: Other farm to ECE activities (please list)
- P: Other

State	Total Respondents	Total farm to ECE Sites	"Yes" farm to ECE (%)	Planning to Start farm to ECE (%)	Total Enrollment of farm to ECE Participating Sites	Sites that Started farm to ECE in the Past Year (%)	Sites Doing farm to ECE for Over 5 Years (%)	Most Frequently Reported Farm to ECE Activities*	Farm to ECE Sites Purchasing Local Food (%)	Farm to ECE Sites Anticipating Local Food Purchasing to Increase (%)
Missouri	89	38	42.70%	28.09%	1,966	23.68%	26.32%	A	63.16%	60.53%
Montana	89	51	57.30%	26.97%	3,057	13.73%	39.22%	A	80.39%	58.82%
Nebraska	10	6	60.00%	30.00%	549	0.00%	0.00%	A	66.67%	83.33%
Nevada	3	1	33.33%	33.33%	194	0.00%	0.00%	B F I J N	100.00%	100.00%
New Hampshire	6	4	66.67%	16.67%	552	0.00%	0.00%	A	100.00%	50.00%
New Jersey	75	36	48.00%	25.33%	2,853	13.89%	33.33%	I	52.78%	44.44%
New Mexico	18	11	61.11%	22.22%	458	0.00%	54.55%	J	81.82%	63.64%
New York	25	13	52.00%	24.00%	1,062	0.00%	15.38%	A B I	76.92%	61.54%
North Carolina	65	35	53.85%	29.23%	3,237	20.00%	28.57%	A	48.57%	51.43%
North Dakota	1									
Ohio	23	6	26.09%	60.87%	72	33.33%	0.00%	A B J	83.33%	66.67%
Oklahoma	34	15	44.12%	35.29%	594	13.33%	26.67%	A	73.33%	40.00%
Oregon	23	14	60.87%	13.04%	2,241	7.14%	57.14%	A	71.43%	28.57%
Pennsylvania	116	51	43.97%	36.21%	3,909	19.61%	31.37%	I	80.39%	49.02%
Rhode Island	6	4	66.67%	16.67%	2,235	0.00%	0.00%	B I	50.00%	75.00%
South Carolina	36	13	36.11%	38.89%	1,045	15.38%	30.77%	A I J	76.92%	61.54%
South Dakota										
Tennessee										
Texas	68	31	45.59%	35.29%	2,225	25.81%	25.81%	A	51.61%	54.84%
Utah	32	22	68.75%	25.00%	755	9.09%	36.36%	I	90.91%	54.55%
Vermont	78	46	58.97%	25.64%	1,025	21.74%	39.13%	A	76.09%	52.17%
Virginia	9	5	55.56%	22.22%	336	20.00%	0.00%	A I	40.00%	40.00%
Washington	153	72	47.06%	26.14%	2,757	13.89%	36.11%	I	79.17%	55.56%
West Virginia	4	1	25.00%	25.00%	263	0.00%	0.00%		0.00%	100.00%
Wisconsin	123	66	53.66%	23.58%	3,242	13.64%	34.85%	I	72.73%	56.06%
Wyoming	5	2	40.00%	20.00%	450	0.00%	50.00%	A B E F I J N	0.00%	0.00%
USA Total	2,030	1,002	49.40%	30.10%	71,745	14.37%	33.03%	I	71.60%	53.99%

**\*Most Frequent Activities Key**

- A: Planted or worked with children in an edible garden at your site
- B: Conducted field trips to farms, gardens, and/or farmers markets
- C: Hosted a farmer visit
- D: Hosted a chef visit
- E: Held taste tests and/or cooking demonstrations of locally produced foods
- F: Held taste tests and/or cooking demonstrations of garden grown food
- G: Celebrated National Farm to School Month (October)
- H: Hosted farm to ECE related community events (including parents)
- I: Educated children about locally grown food, how food grows and/or where it comes from

- J: Served locally grown food in meals, snacks or taste tests
- K: Worked with local producers/processors to develop a specific food product using local food for your site
- L: Promoted locally produced foods in general at the site (e.g., via signs, posters)
- M: Hosted a special event or day related to food and farm
- N: Facilitated children's families access to locally grown foods at home
- O: Other farm to ECE activities (please list)
- P: Other



NATIONAL  
**FARM** *to* **SCHOOL**  
NETWORK