Challenges and Benefits Experienced by Mississippi Schools in the Adoption of Farm to School Programs

Manuel Aldair Franco Pech

University of Mississippi

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CHALLENGES AND BENEFITS EXPERIENCED BY MISSISSIPPI SCHOOLS IN THE ADOPTION OF FARM TO SCHOOL PROGRAMS

By
Manuel Aldair Franco Pech

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of the requirements of the Sally McDonnell Barksdale Honors College.

Oxford, MS
April 16, 2021

Approved by
______________________________
Advisor: Dr. Georgianna Mann

______________________________
Reader: Dr. Anne Cafer

______________________________
Reader: Dr. Kathy Knight
DEDICATION

This Honors thesis is dedicated to my family, who has been there to provide support in my academic endeavors for as long as I can remember. Thank you for everything. I would not be where I am today without you.
Acknowledgments

I would like to first and foremost acknowledge my thesis advisor, Dr. Georgianna Mann, for all of her hard work on this project. The COVID-19 pandemic has brought many hurdles to this project, which has caused it to not be the same as we initially planned. However, we were able to complete this project due to your initiative to move forward past the difficulties we faced. At times when I did not believe that I would complete this project due to personal matters like taking the MCAT, and then deciding that I wanted to take the LSAT, you were willing to provide an uplifting attitude and work with me to develop adequate deadlines to complete this thesis. Thank you for your dedication as an advisor, for your willingness to provide help at a moment’s notice, for helping me refocus when I fell behind, and for your overall exceptional job as an advisor. Your dedication has inspired me to approach all aspects of my life with a positive attitude.

I would also like to express my gratitude towards Dr. Anne Cafer and Dr. Kathy Knight for serving as my second and third readers, respectively. Your time and insight on this project has been very valuable to me.
Abstract

MANUEL ALDAIR FRANCO PECH: Challenges and Benefits Experienced by Mississippi Schools in the Adoption of Farm to School Programs
(Under the direction of Dr. Georgianna Mann)

Mississippi obesity rates are the second highest in the United States. An appropriate target group to combat the state’s high obesity rates are school age children (ages 18 and under), because healthy eating habits developed at this age translate into adult years. An avenue to encourage and develop healthy eating habits are Farm to School (F2S) programs, which provide in-school accessibility to healthy, locally produced foods. The objective of this study was to analyze the results from the 2015 United States Department of Agriculture’s (USDA) F2S Census, which collected details regarding F2S participation across the country, to determine the benefits and challenges faced by Mississippi school districts in the adoption of F2S programs. This was accomplished by sequestering responses provided by Mississippi school districts on the 2015 USDA F2S Census. Responses regarding F2S participation, challenges and benefits faced in the adoption of F2S programs, and which F2S activities received greatest participation were quantified. Results indicated that out of Mississippi school districts that responded to the USDA F2S Census (N=108), roughly half (N=55), participated in F2S programs while the remaining school districts (N=53) faced challenges such as reliable availability of desired foods, pricing concerns, and limitations by school food policies. Benefits experienced include reduced school meal costs, increased acceptance of new meals, and increased school lunch participation. These benefits are significant enough that school districts facing challenges in the adoption of F2S programs should seek aid in adoption of these programs from national and state-based resources.
PREFACE

Though I am a general engineering major, I have always had a deep interest in public health that is rooted in my family’s background as immigrants from Mexico, which led to lack of accessibility to healthcare. This thesis was intended to explore a possible avenue to address the key issue of obesity in Mississippi, which I consider to be my home state. After graduation, I intend to pursue a JD degree and the focus on a career in health law, ultimately working to reform many of the state’s health policies to increase accessibility for underserved groups.
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<tr>
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<td>CAYPOS</td>
<td>Child and Youth Prevalence of Obesity Survey</td>
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<td>WIC</td>
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<td>BRFSS</td>
<td>Behavioral Risk Factor Surveillance System</td>
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<td>Youth Risk Behavior Surveillance System</td>
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<td>NSLP</td>
<td>National School Lunch Program</td>
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<td>HHFKA</td>
<td>Healthy, Hunger-Free Kids Act OF 2010</td>
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Introduction

The current obesity rate among youth in the United States (ages 2-19 years) is 18.5%, a 4.6% increase since the National Center for Health Statistics (NCHS) began data collection in the 1980s. Mississippi childhood obesity rates (ages 2-17 years) are the second highest in the United States (SOCB, 2020). The development of unhealthy eating habits at an early age has been shown to correlate with unhealthy eating habits in adulthood (Corsini et al., 2013). Interventions that promote healthy eating habits in early age groups, such as elementary school age children, have proven successful in combating unhealthy eating habits that can potentially lead to obesity at later stages in life (Laureati, Bergamaschi, Pagliarini, 2014). A comprehensive strategy to actively promote healthy eating habits for youth are farm to school (F2S) programs. F2S programs encompass a variety of F2S activities including, but not limited to, procuring locally grown foods for use in school meals, maintaining school gardens, providing education about healthy locally grown foods in the classroom, and presentations by local farmers. In 2016, the US Department of Agriculture (USDA) executed a national F2S survey in order to gather data on F2S participation in K-12 school districts. The goal of this study is to extrapolate the responses provided by the 108 Mississippi school districts that participated in the F2S survey conducted by the USDA with a focus on the benefits experienced by Mississippi school districts participating in F2S programs, benefits experienced by local farmers from which food is procured, and the barriers that have prevented schools from participating in F2S programs.
Chapter 1: Literature Review

Prevalence of Childhood Obesity

Obesity is an ever-prevalent nutritional disorder affecting the population of the United States. As of 2020, the World Health Organization determined that the United States ranked as the twelfth most obese nation in the world, with an affected 36.2% of the adult population. The state of Mississippi has been determined to be the state with the second highest prevalence of obesity within the 50 U.S. states and D.C., outranked only by West Virginia. An estimated 37.3% of the state’s adult population is obese. Data on obesity rates of Mississippi children in grades K-12 are scarce, but data collected in 2015 by The Child and Youth Prevalence of Obesity Survey (CAYPOS) determined that 43.4% of children in grades K-12 are overweight or obese (18.2% and 25.2%, respectively). The Supplemental Nutrition Program for Women, Infants and Children (WIC), a state program that addresses nutritional disparities faced by mothers and their children, determined in 2015 that the youth group most affected by obesity are children of ages 2-5, with a prevalence of 31.1%. It is projected that the prevalence of obesity will continue to increase in the next 20 years among not only children, but all age groups of the Mississippi population (MSDPH, 2018). Data collected by the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS) in 2016 recognized that the increase in Mississippi’s obesity rates would in turn correlate with an increased risk for developing serious comorbid disorders such as heart disease, type 2 diabetes, high blood pressure, stroke, and various forms of cancer. Together, these comorbid chronic diseases account for 55.8% of deaths from all ages across the Mississippi population (MSDH, 2017). In 2016, results from the CDC’s Youth Risk Behavior Surveillance System (YRBSS) indicated an
increase in obesity rates over the next 20 years in the youth population. Mississippi’s youth population consumes less fruits and vegetables, more foods of low nutritional value like soda, and eat breakfast less frequently than same-aged U.S. population (YRBSS, 2015). Research indicates that unhealthy eating habits that contribute to these comorbid chronic conditions are often developed in childhood and persist into adulthood (MSDH, 2018). Thus, there is a clear need to develop healthy eating habits in Mississippi’s youth that trades junk foods high in fat and sugars for a balanced diet of adequate fruit, vegetable, grain, protein, and dairy servings. Nutritional interventions during early scholastic years that focus on promoting healthy eating habits foster long-lasting healthy eating habits in children and could combat the high obesity rates of K-12 children (Laureati, Bergamaschi, Pagliarini, 2014).

**National School Lunch Program**

The National School Lunch Program (NSLP) is a federally assisted school lunch program that operates in public and nonprofit private schools. Students that attend schools which participate in the NSLP have the opportunity to receive nutritionally balanced meals for full, free or reduced-price. Schools are then reimbursed for the meals that are provided (USDA, 2020). The NSLP has defined serving standards for the meals that are provided through their program. Development of these serving standards are based on a set caloric range, elimination of trans-fats, and limitation of saturated fats. An emphasis is placed on providing a balanced variety of fruits and vegetables. Additionally, the menus are tailored to three age groups, grades K-5, grades 6-8, and grades 9-12. Students participating in the NSLP receive 8-12 ounces of grains, 8-12 ounces of meat (or a nutritionally similar alternative), 1 cup of milk, $\frac{1}{2}$ -1 cup of fruits, and $\frac{3}{4}$-1 cup of vegetables on a daily basis, accounting for 550-850 calories (SNA, 2012). However,
there are immediately recognizable problems with the NSLP standards, and thus its widespread implementation. According to the USDA’s MyPlate recommendations for a balanced diet, children 4-8 should eat 1.5 cups of fruits and vegetables daily. The recommended daily serving of vegetables increases to 2.5 cups for individuals aged 9-13 and to 3 cups for individuals aged 14-18. This increase is also seen in daily fruit serving recommendations where the recommendations for individuals 9-13 is 1.5 cups and increases to 2 cups for individuals aged 14-18 (Chrisman & Rios, 2019). Under these recommendations, the 1 cup maximum serving of fruits and vegetables provided by NSLP is insufficient for a healthy diet. It is important that NSLP fruit and vegetable servings be increased because children from households that lacked food security, or only marginally achieved food security, were more likely to eat school meals and receive a substantial amount of their daily nutrient intake from school meals (Potamites & Gordon, 2010). While the NSLP has undergone various modifications, more recently under the Healthy, Hunger-Free Kids Act (HHFKA) of 2010, its existence and prevalence since 1946 have proven to be a step in the right direction when it comes to advocating and implementing nutritionally balanced and beneficial food programs in school. Growing accustomed to healthy eating in early scholastic years reduces healthy food neophobia, or the fear of trying new healthy foods, as well as builds healthy eating habits that are retained in following years and leads individuals to select healthy lifestyle options outside of the nutritional realm (Laureati, Bergamaschi, Pagliarini, 2014).

**Benefits of a Balanced School Lunch**

Eating well-balanced meals in the K-12 school setting can have significant implications for an individual’s diet throughout their lifetime. The USDA’s 2020-2025 Dietary Guidelines for
Americans offers comprehensive details regarding what constitutes a healthy diet. Although estimates vary by gender, recommended food intake by category for children of ages 5-8 are 1 - 1/2 to 2 1/2 cups of vegetables, 1 to 2 cups of fruits, 4 to 6 ounces of grains, 2 1/2 cups of dairy, and 3-5 1/2 ounces of protein daily. Children of ages 9-13 daily recommendations include 1 1/2 to 3 1/2 cups of vegetables, 1 1/2 to 2 cups of fruits, 5 to 9 ounces of grains, 3 cups of dairy, and 4 to 6 1/2 ounces of protein. For ages 14 - 18 the daily dietary recommendations are 2 1/2 to 4 cups of vegetables, 1 1/2 to 2 1/2 cups of fruits, 6 to 10 ounces of grains, 3 cups of dairy, and 5 to 7 ounces of protein daily (USDA, 2020). Exposure to healthy fruit and vegetable options at an early age can decrease food neophobia, even without an implemented incentive system to eat them, which will in turn increase the inclusion of these food items in the diet as age progresses (Corsini et al., 2013). Healthy food consumption encouragement methods, such as modelling from adults and caregivers, also increase the rate of FV consumption (Corsini et al., 2013). In addition to increasing inclusion of healthy foods in the diet, early exposure to healthy fruit and vegetable options also increases the consistency of consumption of these healthy options because children that learn to make healthy food decisions at school also make healthy food decisions at home, even in the presence of unhealthy food options.(Horne et al., 2004). This study focuses on F2S programs, which serve as a comprehensive avenue to healthy food exposure and encouragement to consume healthy foods in the school setting.

**Farm to School Programs & Balanced School Lunch**

F2S programs encompass community, classroom, and lunchroom exposure to FVs from an early age. The earliest F2S programs were developed in the 1990s and have increased in number since then. In 2007 the National Farm to School Network (NFTSN), an organization that
advocates and supports the development of F2S programs across the United States, was created (Denton, 2020). F2S programs were formally recognized by the USDA after the 2010 HHFKA, which created the NFTSN, as well as a F2S Grant that provides funding for schools that have an intent to develop F2S programs. F2S programs vary significantly across school districts, but the NFTSN outlines three key components of F2S programs: procurement of school foods from local farms, development and participation of students in local gardens, and education programs that teach students about agriculture, healthy eating habits, and nutritional value of the locally procured foods (Denton, 2020). The USDA also outlines a list of F2S activities that includes the following: procuring cafeteria/snack foods from locally grown farms, using cafeteria food coaches, hosting taste testing/demos of product from school based gardens or school based farms in the cafeteria, promoting local products through themed or branded promotions, using Smarter Lunchroom strategies, or hosting taste testing/demos of locally produced foods in the cafeteria/classroom. The term local when in relation to food procurement can mean within the same city or county, within the same state, or within a proximal geographic region. Examples of locally procured foods include, but are not limited to: fruits, vegetables, milk, non-milk dairy items, meat/poultry, eggs, seafood, plant-based items such as beans, seeds, or nuts, grains or flour, baked goods, or herbs (USDA, 2017). F2S programs by nature have various beneficiaries including local farmers, school districts, and students. Local farmers are at a competitive disadvantage in regards to distribution, marketing, sustainability, and profitability when compared to large-scale farms that operate at a global scale. F2S programs benefit local farmers by providing a reliable market for their goods. Farmer-school relationships also help communities by boosting local economies. According to a study by the NFSN, each dollar donated to the NFSN results in 60 cents filtered back into a local economy (Denton, 2020). Data
regarding the benefits of F2S programs on school districts and students is more prevalent and makes it clear why F2S programs are adopted.

**Why Farm to School?**

F2S programs provide several proven benefits to school districts that act as reasons to adopt F2S programs. The most prevalent reasons relate to the outstanding quality of the foods that are procured locally, the competitive pricing, and the community involvement. School food service professionals (SFSPs) claim that the quality of locally procured foods is the leading contributor to student participation in F2S programs. Compared to foods procured from long distances, locally procured foods are more fresh and tend to be better-tasting, by the judgement of SFSPs (Izumi et al., 2010). This is mostly because, unlike foods procured from longer distances, locally procured foods did not have to travel long distances and undergo processing procedures. The quality of not only the food, but also the interaction with food providers is essential to school districts being motivated to participate in F2S programs. According to SFSPs the interactions between local farmers, or their representatives, is more trouble-free than interactions with commercial food providers. Local farmers are also more willing to tailor to any specific needs of school districts, which can facilitate the development of school menus. Lastly, the pricing of foods procured from local farms can heavily influence the participation of school districts in F2S programs. The distribution of foods is not as complex when the foods are procured from locally grown farms in comparison to when the food is sourced from commercial farms (Botkins & Roe, 2018). The utmost complexity of food distribution in F2S programs arises when farmers sell their foods to local wholesalers, which then sell to school districts. By reducing the number of “middle-men” involved in distribution, locally procured foods are
typically available at lower prices. Items can also be offered at lower prices due to an effect of disadvantages faced by local farms in the competitive agricultural market. Often-times local farmers are out-competed in the market by larger-scale farms that have more effective production methods in place, leading farmers to have items that they were unable to sell. These same standardized production methods that commercial farms have often produce foods that are more appealing to supermarket shoppers. Local farms often yield crops that are not marketable, such as smaller or misshapen FVs. These imperfections in FVs can be irrelevant to school lunches; the foods are often cut. Even if served whole, smaller FVs that may not sell in a supermarket will appeal to children in lower grades of elementary school. Thus, many school districts take advantage of this phenomenon by buying these imperfect items from farmers at a lower price (Izumi et al., 2010).

**Farm to School Programs as an Avenue to Reduce Food Neophobia**

By implementing F2S programs with accompanying education that covers agricultural awareness (where the food in the cafeteria comes from), nutritional value of the available foods, and tasting demonstrations, students on average consumed 33.1% more FVs than students in school districts that do not participate in F2S programs (Denton, 2020). Various quantitative studies have shown F2S programs to be effective in decreasing food neophobia, or the fear of trying new/unfamiliar foods, which is a prevalent deterrent among children in regards to trying healthy foods. The most effective strategy to combat healthy food neophobia is to increase exposure, and in turn familiarity, to these foods. According to a quantitative study, teacher-led field trips to farms where school foods are grown in turn led to increased motivation in students to try these foods in the cafeteria. Farmer participation in the program as part of agricultural
education programs increased knowledge of who grew the foods that were available in the cafeteria amongst elementary school children, thus resulting in higher rates of student participation in F2S programs. Equally important to helping decrease food neophobia is the higher quality of the locally procured foods. Locally procured FVs tend to be more fresh and better tasting than FVs that have travelled long distances, according to SFSPs. Thus, once students try these foods, they are more likely to eat them again (Izumi et al., 2010).

**Farm to School Programs in Mississippi School Districts**

In 2013, the USDA conducted a nationwide, survey-based F2S Census in order to determine the prevalence of school districts with F2S programs. This census was conducted again in 2015, with minimal changes to the results. The USDA’s F2S Census provides relevant data including which school participate in F2S programs, which F2S activities school districts partake in, benefits that school districts have experienced from F2S programs, which school districts lack F2S programs, reasons why school districts lack F2S programs, and financial data regarding costs accrued through the procurement of school lunches. A total of 108 school districts in Mississippi participated in the USDA F2S census, with approximately half of these school districts participating in F2S programs.

**Benefits Experienced by Mississippi School Districts in Farm to School Programs**

Mississippi school districts that participate in F2S programs have experienced several overlapping benefits. The USDA recognizes several common benefits that may be experienced by participating in F2S programs in the F2S Census: reduced food waste, lower school meal program costs, greater acceptance of new meal patterns, increased participation and consumption
of school meals, and greater community support for school meals (USDA, 2017). Greater community support for school meals stems from participation of farmers in F2S programs. The Mississippi Farm to School Network (MFTSN), an organization that brings the advocacy of the NFTSN to a state level, outlines several guidelines to implement farmer participation in F2S programs once procurement agreements are settled. Farmer participation in F2S programs can increase familiarity of where food items come from, how they are grown, and in turn increase the motivation of students to try these food items when they come across them in the school cafeteria (MFTSN, 2021). Like all other F2S programs, F2S programs in Mississippi expose students to healthy food options, from an early age in the case of elementary schools, which can reduce food neophobia and create healthy eating habits. According to the MFTSN, a key contributor to increasing exposure to healthy foods is maintaining school gardens. Maintaining school gardens has shown correlation with increased consumption of FVs not only in the school setting, but reportedly also in the household (MFTSN, 2021).

**Barriers to the Implementation of Farm to School Programs**

The implementation of F2S programs can have challenges that are difficult to overcome. In the F2S Census, the USDA outlines several possible difficulties that can act as deterrents for the implementation of F2S programs in school districts: local producers not bidding, issues with year-round availability of key foods, small range of products offered by local farmers, unstable product prices, low reliability on local farmers, lack of equipment in schools to process local foods, lack of compliance with school purchasing policies, difficulty finding growers and distributors, difficulty getting punctual delivery of food items, inability of farmer to meet food requirement specifications, and delivery issues. In addition to this list, the USDA recognizes that
numerous other unlisted issues can arise in the procurement of local foods (USDA, 2017). Comprehensive studies have also shown that as school districts become more rural, they become less likely to participate in F2S programs (Botkins & Roe, 2018). A majority of Mississippi’s school districts are located in rural areas, causing various problems such as lack of farmers bidding, problems with the acquisition of seasonal goods, and ability to process foods straight from the farm in the school cafeteria to be prevalent. Due to the low income of school districts across the state, many of them have problems with policies regarding school lunch food procurement from local sources, as they have to abide by stringent state regulations.

**Ongoing Need to Overcome Barriers to Farm to School Program Implementation**

The benefits experienced by Mississippi school districts that currently have F2S programs have direct, observable positive effects such as an increase in FV consumption and liking. F2S programs also provide significant benefits such as reduction of food neophobia, development of healthy eating habits, and awareness of the nutritional value of foods. Mississippi children are faced with several disparities out of their control such as obesity, lack of accessibility to balanced meals, and low dietary education (MSDH, 2017). F2S programs simultaneously address these issues in the schools where they have been implemented. Unfortunately, many school districts in Mississippi are unaware of the potential benefits of F2S programs, how to develop and implement F2S programs, and what F2S programs even are. These school districts typically do not offer alternative programs in place that provide equivalent benefits. Although the NFTSN and MFTSN have great resources available, advocacy work still has various barriers to overcome to reach every school district across the state. In Mississippi, agriculture is the leading industry (MDAC, 2020). With adequate work, plans regarding
procurement of school lunches can be developed (MFTSN, 2021). Bringing F2S programs to the school districts in Mississippi that lack them is significant because the potential for significant life-long benefits to the school districts, students, and communities is high.

**Evaluation of F2S programs**

The purpose of this study was to analyze the results from the 2015 USDA F2S Census, the most recent version of this census. The USDA F2S Census collected data regarding F2S participation from school districts across the United States, Guam, Puerto Rico, and the Virgin Islands. The data from Mississippi respondents was used to evaluate F2S programs in Mississippi. School districts that had established F2S programs, as well as those that did not, answered the survey. Responses included data regarding benefits and challenges experienced by Mississippi school districts in the adoption of F2S. School districts also provided data regarding the type of F2S activities that they participated in and which age groups within the school district received F2S exposure. By quantifying this data it was possible to evaluate F2S program prevalence and structure in Mississippi.
Chapter 2: Methods

The 2015 USDA Farm to School Survey

This study utilized data from the 2015 USDA F2S Census, which was developed to meet three data collection objectives. The first objective of the census was to gather the following procurement data in relation to the local sourcing of foods by school districts: types and frequency of local products purchased, sums of dollar amounts spent on all foods as well as local foods, and whether purchasing levels of local food were projected to increase, decrease, or stagnate. The second objective of the census was to assess additional F2S activities that school districts participate in. These additional F2S activities include, but are not limited to, promotional activities, integration of F2S information in the curriculum, and the prevalence of school gardens. The third objective, which gathered data directly relevant to this study, was to determine the benefits and challenges that participating school districts had experienced through participation in F2S programs. Respondents that did not participate in F2S activities were asked to describe the challenges that they had faced in regards to F2S activities, with a focus on challenges accrued in the procurement of locally sourced foods.

The survey’s target audience was public school districts, private schools, and charter schools that both participate and do not participate in the NSLP. The schools surveyed were located in the United States, Guam, Puerto Rico, the Virgin Islands, and Washington D.C. In some states, residential childcare institutions and other non-school based sites that participated in the USDA’s National F2S Program were also surveyed. It is important to clarify that data collection targeted the School Food Authority (SFA), and ultimately SFSPs, of public school districts, private schools, and charter schools rather than individual schools. A SFA is a person or
group selected and hired by the board to oversee and administer the school lunch program of the District, and determine eligibility requirements in the school lunch program for recipients of free and reduced price lunches. For the purpose of quantifying respondent data, each SFA was considered to be one respondent. The target audience was made aware that participation in the USDA F2S Census was voluntary, and responses were not considered confidential.

Survey Distribution and Recruitment

Distribution of the 2015 USDA F2S Census was initiated by issuing an online website link to the census to SFSPs of the target institutions in March of 2015. The data from the online responses was primarily collected by SurveyMonkey (SurveyMonkey 2015, San Mateo, CA), an online survey development software. School districts were also given the option to complete a hard-copy, fax-back version of the census. Fax-back responses to the census were processed by a third-party contractor, Mathematica Policy Research. This third-party contractor was also responsible for issuing follow up phone calls and emails to non-respondents over the data collection period of the census.

After nationwide dissemination of the census, requests for completion of the survey were administered by state agencies responsible for administering Child Nutrition Programs (CNPs). In Mississippi the corresponding state agency is the Mississippi State Department of Health. In addition to state agencies responsible for administering CNPs, encouragement to participate in the census was also issued by interested third parties. SFSPs received three reminder emails, as well as one reminder phone call from Mathematica Policy Research from March-May 2015. The USDA’s data collection period ended on August 3rd, 2015, at which point the USDA gathered and organized the preliminary data. After publication of initial data on October 20, 2015, the
USDA’s data collection contractor, *Mathematica Policy Research*, administered one final request to SFPSs that had not completed the census that consisted of three reminder emails over the period of one month until the official closing of the data collection period on November 20, 2015.

**Participation**

A total of 18,104 USDA F2S Census surveys were sent out to target public, privated, and charter school districts. The overall response rate was 70% (N = 12,585). Of the 12,585 responses, 11,041 were returned during the initial data collection period (March-August 2015). The remaining 1,544 responses were returned during the second data collection period (October-November 2015) after follow up requests were distributed to non-respondents of the initial data collection period.

**Measures**

One of the primary objectives of the 2015 USDA F2S Census, and this study, was to determine the benefits and challenges that school districts have experienced through participation in F2S programs. In order to do this, Question 2 of the survey (shown in Table 1 below) measured the level of participation of each institution in F2S activities. The census then gathered additional information regarding challenges and benefits based on the level of participation in F2S programs. School districts that had well established F2S programs (responded “Yes” to question 2), as well as those that had recently started new F2S activities (responded “No, but started activities in the 2014-2015 school year”) were asked about the benefits that they had experienced thus far. School districts that were planning to participate in F2S activities in the
future (responded “No, but plan to start activities in the future” to Question 2) were asked about the benefits that they were hoping to experience. Data regarding the challenges of engaging in F2S activities, particularly procurement of local foods was collected from both school districts that had well established F2S programs (responded “Yes” to question 2) and school districts that no F2S plans (responded “No activities currently and no plans for the future” to question 2). The relevant measures (survey questions) taken at each level of activity are shown in Table 2 below.

Table 1. F2S Participation Question 2 on 2015 USDA F2S Census and Possible Responses

<table>
<thead>
<tr>
<th>2015 USDA F2S Census Question # 2</th>
<th>Possible Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
<td></td>
</tr>
<tr>
<td>Farm to school activities generally center around procurement of local or regional foods and food, agriculture or nutrition-based educational activities such as but not limited to:</td>
<td></td>
</tr>
<tr>
<td>● Serving local food products in school (meals and snacks)</td>
<td></td>
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<tr>
<td>● Serving local food products in classrooms (snacks, taste tests, educational tools)</td>
<td></td>
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<tr>
<td>● Conducting educational activities related to local foods such as farmers in the classroom and culinary education focused on local foods, field trips to farms, farmers’ markets or food processing facilities, and educational sessions for parents and community members</td>
<td></td>
</tr>
<tr>
<td>● Creating and tending school gardens (growing edible fruits and vegetables)</td>
<td></td>
</tr>
<tr>
<td><strong>Possible Responses</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No, but started activities in the 2014-2015 school year</td>
<td></td>
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<tr>
<td>No, but plan to start activities in the future</td>
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<tr>
<td>No activities currently and no plans for the future</td>
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<tr>
<td>Response to Question # 2</td>
<td>Survey Question #</td>
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<tr>
<td>No, but started activities in the 2014-2015 school year</td>
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<td>4</td>
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<td>5</td>
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<tr>
<td>No, but plan to start activities in the future</td>
<td>6</td>
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<td></td>
<td>7</td>
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<tr>
<td>No activities currently and no plans for the future</td>
<td>9</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
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<td>27</td>
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<td>28</td>
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</tbody>
</table>

**Data Analysis**

Data from the 2015 USDA F2S Census was compiled in Microsoft Excel (Microsoft Corporation 2019, Redmond, WA) and made available to the public. For the purpose of this study, only responses from institutions in the state of MS were used. To seclude the data
pertaining only to Mississippi school districts, responses from Mississippi institutions were identified and then transferred to another Microsoft Excel sheet while all other responses were ignored. Once data pertaining to Mississippi was secluded, every school’s response to question 2 on the USDA F2S Survey (see Table 1) was recorded. Lastly, only responses to questions noted in Table 2 were used for further analysis. The responses were sorted by response to question 2 on the USDA F2S survey, but those who answered “Yes” and “No, but started activities in the 2014-2015 school year” were occasionally combined since both of these groups participated in F2S activities at the time of the survey and were thus able to provide similar insight. Only data containing information about the benefits, challenges, types of F2S activities that Mississippi school districts partook in, and procurement details of school districts that do participate in F2S activities were quantified and used for a descriptive analysis.
Chapter 3: Results

F2S Participation in Mississippi

Of the Mississippi school districts that responded to the survey (N=108), approximately half of the school districts had functional F2S programs (N=53) or had recently started a F2S program (N=2). These two groups are considered to be currently participating in F2S programs. The remaining school districts (N=53) faced barriers to the implementation of F2S programs that need to be addressed in order to improve the school lunch experience for students, the community, and school districts. Of the 53 school districts, most (N=38) had no current participation in F2S activities and no plans to start activities in the future whereas some (N=15) planned to start activities in the future.

In addition to the level of participation in F2S programs by Mississippi school districts, the age groups that are most exposed to F2S programs were also explored. School districts that had active F2S Programs (N=55) were asked for information regarding the age groups that participated in F2S activities (see Figure 1). Grades K-5 (elementary school aged children) had the highest participation in F2S programs and activities whereas Pre-K students had the lowest level of participation. Grades 6-8 (middle school aged students) and 9-12 (high school aged students) both achieved approximately 2% less F2S participation than grades K-5.
Figure 1. Participation by Grade in F2S Programs in Mississippi Schools in during the 2014-2015 Academic Year

F2S Procurement and Activities

Participants of the USDA F2S Census that participated in F2S activities were asked to specify what they considered to be “local” in regards to procurement of local foods. Results are shown in Figure 2. Most schools (58.3%) considered local foods to be those that originated from the same state (Mississippi), while 12.5% of the F2S-participating institutions shortened the consideration to foods procured from the same city or county. The same percentage (12.5%) of institutions considered foods procured within a 50 mile radius to be local. A lesser percentage of F2S-participating institutions considered foods to be local if they originated within a 100 mile radius or within the same geographic region (10.4% and 6.3%, respectively).
Figure 2. How Schools Currently Participating in F2S Programs Defined “Local” in regards to the Origin of Procured Foods

- Within a 50 Mile Radius
- Within a 100 Mile Radius
- Same City/County
- Within the State
- Within the Same Geographic Region

School districts that participated in F2S Programs were asked to specify which F2S Activities they participated in. School districts were allowed to select which F2S activities they partook in from from a list provided on the census’s survey, and multiple responses were allowed if the school participated in more than one F2S activity. The results, shown in Figure 3, demonstrate that serving locally procured foods in the school setting (during breakfast, lunchtime, or afterschool programs) was the F2S activity that received the greatest level of participation.
Figure 3. F2S Activities with Highest Participation Rates Among Mississippi Schools Currently Participating in F2S Programs
Barriers Faced by Mississippi Schools in the Adoption of F2S Programs

The USDA F2S Census asked respondents that had F2S Programs, as well as non-participants of F2S programs to indicate barriers that were faced in regards to adopting F2S programs. Multiple selections were allowed if school districts experienced more than one challenge to implementing F2S programs. The barriers experienced by school districts that had no current participation in F2S activities and no plans to start activities in the future are shown in Figure 4. Reliable availability of desired foods was the leading reason that school districts were unable to establish F2S programs, followed by barriers relating to payment and restrictive school policies.

Figure 5 shows challenges that are faced by school districts with established F2S programs. In addition to reliable availability of desired foods, barriers relating to payment and restrictive school policies and functional coordination of procurement logistics with the local producer were also leading challenges. While not as frequently reported in school districts with established F2S programs, school districts that have not been able to implement F2S programs also faced the challenge of being able to process and prepare the local foods to a servable form within school facilities.
Figure 4. Challenges of Adopting F2S Programs Experienced by Mississippi Schools that Do Not Have F2S Programs and Have No Future Plans to Adopt One
Figure 5. Challenges of Adopting F2S Programs Experienced by Mississippi Schools that Currently Have F2S Programs
Benefits Posed by the Adoption of F2S Programs

In addition to determining which barriers were most prevalent in the adoption of F2S activities, it was also important to explore the benefits of F2S programs. In order to quantify which benefits were expected to come out of F2S programs, the USDA F2S Census survey asked school districts that were not currently participating in F2S activities but were planning to in the future to select what benefits they expected to see after adoption of a F2S program from a given list. Multiple responses were allowed from respondents who expected more than one benefit to arise from participation in a F2S program. The results, shown in Figure 6, make it clear that increased support for school meals and increased acceptance of new meals by students are the two benefits that Mississippi school districts most expected as a result of adopting F2S programs. The USDA F2S Census also surveyed respondents that already have F2S programs about which benefits they had already experienced. Multiple responses were allowed from respondents who had experienced more than one benefit. Results are shown in Figure 7. Though reduced food waste and reduced meal cost were not amongst the most expected benefits of F2S programs in school districts that did not have established programs yet, they were prevalent benefits seen in school districts that already had established F2S programs. In fact, reduced meal cost was the most prevalent benefit experienced by this group.
Figure 6. Benefits Expected by Mississippi Schools with Future Plans to Adopt F2S Programs

- Reduced Food Waste
- Reduced School Meal Cost
- Increased Acceptance of New Meals
- Increased School Lunch Participation
- Increased Community Support for School Meals
- Other

Total # of Responses
Figure 7. Benefits Experienced by Mississippi Schools that are Currently Participating in F2S Programs
Chapter 4: Discussion

F2S Participation in Mississippi

The purpose of this study was to analyze secondary data from the 2015 USDA F2S Census, a national survey conducted in order to determine the participation rates of school districts in Mississippi in F2S programs, as well as the challenges and benefits faced through the adoption of F2S programs.

Of the Mississippi school districts that completed the survey, 51% were enrolled in F2S programs. Participating school districts reported that children in grades K-5 exhibited higher participation (approximately 2% more) than children in grades 6-8 and 9-12. Pre-K aged children had the lowest participation in F2S activities (15.4%), but it is important to note that pre-K enrollment numbers in Mississippi are lower than those of grades K-12. In the 2020-2021 school year, only 6,013 children were enrolled in pre-K programs compared to an average 33,058 in grades K-12 (MDE, 2021). The higher participation in F2S programs among grades K-5 compared to grades 6-12 has significant implications regarding potential health benefits. Younger elementary school age children are more likely to try healthy food options and ultimately develop and retain healthy eating habits compared to children of older age groups (Laureati, Bergamaschi, Pagliarini, 2014). Thus, the higher rates of F2S participation in grades K-5 can help develop healthy eating habits that may be retained at later ages even if the exposure to F2S programs and accompanying healthy eating options decreases in grades 6-12.

Significance of Local Food Procurement in F2S Programs

The 55 school districts participating in F2S programs were asked how they defined the term “local” foods by detailing the distance from the school where the food was produced.
(Figure 2). A majority of respondents considered foods to be local as long as they were procured within the same state (58.3%) whereas the remaining respondents considered foods procured within 100 miles or less, as well as within the same region, to be local. These results indicate that a majority of Mississippi school districts participating in F2S programs procure their food within the same state, which has positive economic implications. In Mississippi, agriculture is the leading industry (MDAC, 2020). Using school districts within the same state is an opportunity to expand the agricultural market within Mississippi and has positive potential for increasing the state’s agricultural income.

Procuring foods from within the same state can significantly reduce the distance that foods must travel from the producer to the purchasing schools. This simplification of logistics parallels a reduction in food costs for schools. As a result, the most prevalent benefit that was experienced by Mississippi school districts that participated in F2S programs was reduced meal costs (Figure 7). Reducing the meal costs can directly influence the participation in F2S programs. This is reflected in the results, as increased school lunch participation tied for the third most experienced benefit by Mississippi school districts that participate in F2S programs.

**Benefits of F2S Programs**

As seen in Figure 6, increased acceptance of new meals was the second most prevalent benefit experienced as a result of adopting F2S programs. This is very significant because F2S programs can be a clear avenue to reducing healthy food neophobia, and ultimately contribute to developing lifelong healthy eating habits. This relation is likely because greater exposure and increased likeliness to try healthy foods. This phenomenon was observed in a study where participants (N=185) in the age group 4-6, where exposure alone to unpopular sample
vegetables, without any incentive to consume, increased children’s ratings of them on a satisfactory scale (Corsini et al., 2013). This increased liking of healthy foods at an early age can develop healthy eating habits that remain in later years (Horne et al., 2004).

Other prevalent benefits of F2S programs that were experienced include increased community support for school meals and reduced food waste. Increased community support for school meals includes increased parent approval of school meals, which can further increase the likeliness of children participating in school meals. This finding is significant because food waste is used to measure meal acceptance and consumption. Lower amounts of food waste is indicative of higher consumption of meals because less food is thrown out (Thapa & Lyford, 2018). This further justifies that F2S programs serve as a multi-purpose approach to providing nutritious meals to students, reducing food waste, and ultimately creating a more sustainable school food program.

Respondents to the F2S survey that participated or were planning to participate in F2S programs (N=70) were asked to describe what F2S activities they partook or planned to partake in (Figure 3). The most common response was “serving locally procured foods in the school setting” (N=66). The school setting can be used to describe breakfast, lunch, and afterschool meals alike. The high response rate for this activity is characteristic of the main purpose of F2S programs: to bring locally produced foods to student’s plates. The F2S activity with the second highest participation (N=40) is holding taste tests and demonstrations of locally grown foods. These events can directly be linked to reducing healthy food neophobia because students are directly exposed to and encouraged to try new healthy foods. Encouragement is further displayed by high participation rates (N=31) in the F2S activity labeled “encouraging student selection and consumption of locally produced foods”. Encouragement can be given in the classroom or
lunchroom setting. Results from various intervention based studies parallel the increase of healthy food consumption as a result of encouragement. A 2016 study involving 4th and 5th graders (N=76) at an elementary school in Wisconsin studied the effects of a reward system as encouragement to consume FVs, as well as simple teacher modelling of FV consumption. FV consumption increased from 7% amongst the group to nearly 40% within just 15 weeks (Bica et al., 2016). Furthermore, this study measured FV selection by measuring the quantity of FVs brought to school by students that brought lunch from home. This is indicative that encouragement to consume healthy foods can lead to healthy diet choices outside of the classroom. Community related events are also quite common, with celebration of F2S month (N=32), which is October, and media promotion of locally produced foods (N=31) being additional F2S activities with common participation.

The Need to Address F2S Barriers

Benefits of F2S programs such as reduced meal costs, increased acceptance of new meals, and increased school lunch participation and consumption can all be directly beneficial to children’s health. The opportunity to develop healthy eating habits is quite significant amongst Mississippi youth due to the state’s obesity rates. In fact, 43.4% of children in grades K-12 are overweight or obese (CAYPOS, 2015). Unfortunately, many school districts have faced challenges in the adoption of F2S programs and are thus unable to attain these benefits. School districts that currently have no F2S programs and no plans to adopt an F2S program (N=38) in the future were asked to detail which barriers prevented them from developing F2S programs on the USDA F2S survey (Figure 4). Most of the school districts identified reliable availability of desired goods to be the main challenge faced in the adoption of F2S programs prices and
payment concerns. Additional challenges relating to procurement like food quality and coordination of procurement logistics were also very common challenges described by this group. Since the USDA F2S census in 2015, new resources detailing the adequate times of the year to contact farmers to ensure reliable availability of desired foods have been developed by the Mississippi Farm to School Network. The Mississippi Farm to School Network also has resources that outline procurement details that school districts interested in F2S programs may use to solve concerns regarding logistics and quality. Other significant barriers encountered include conflict with existing school and state guidelines and the lack of adequate resources within school cafeterias to process local foods into servable forms. Concerns regarding lack of resources to process local foods can be addressed with help of the USDA’s Farm to School Grant Program, which provides competitive F2S grants that support planning, developing, and implementing F2S programs. USDA’s Farm to School Grants are an important way to help state, regional, and local organizations as they initiate, expand, and institutionalize F2S efforts (USDA, 2021).
Chapter 5: Conclusion

The benefits experienced by Mississippi school districts that participate in F2S programs have significant positive implications for the state’s economy, as well as increasing participation in school lunches. F2S programs focus on procuring school lunch foods from local farmers, which in turn provides students with healthy food options. The increased consumption of these healthy food options, shown by decreased food waste and encouragement to try locally produced foods in school districts with F2S programs, can help to reduce healthy food neophobia and develop healthy eating habits in children that will persist into adulthood. This can help address Mississippi’s high obesity rates while simultaneously increasing the market for Mississippi farmers and the state’s leading industry, agriculture. However, many school districts have been unable to implement F2S programs due to barriers such as reliable availability of desired foods, pricing, and limiting school food policies. Thus, these school districts cannot benefit from the community, classroom, and lunchroom benefits that accompany the adoption of F2S programs. Since the 2015 USDA F2S Census, on which this study is based, national resources like the USDA F2S Grant Program and state resources like the Mississippi Farm to School Program have been established in an effort to address many of the challenges that have been faced by Mississippi school districts in the implementation of F2S programs. Access to these resources can address the challenges faced by school districts that have been unable to establish F2S programs that ultimately benefit children’s health and the state’s economy.
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Appendix A: USDA Farm to School Census Questionnaire Survey

2015 FARM TO SCHOOL CENSUS FAX–BACK QUESTIONNAIRE

If you would rather complete the 2015 Farm to School Census by hand and fax back, please use this form and fax the form back to (609) 936-1462. If you need assistance completing the questionnaire, please call a toll free help line 1-844-218-5330 or email farmtoschool@mathematica-mpr.com.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0584-0593 (expires February 29, 2016). The time required to complete this information collection is estimated to average 9 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This information collection is conducted under the authority of 7 U.S.C. 427.

Welcome to the 2015 Farm to School Census!

We know this is a busy time of the school year, and we deeply appreciate your time. This Census will provide updated information about how many SFAs are purchasing locally produced food for school meal programs or conducting other farm to school activities such as bringing students to farms and farmers into classrooms, teaching students how to cook locally grown food, and cultivating edible school gardens.

Before you start, a few important reminders:

- Please complete the questionnaire even if you do not buy any locally produced food. We need your response to estimate what percentage of school districts ARE buying locally produced food.

- Please complete a separate Farm to School Census questionnaire for each school district SFA you manage.

- The questionnaire has been kept as short as possible and should take about 20 minutes if you are involved with farm to school and only 5 minutes if you are not.

- A few questions ask for the total value of food purchases during school year 2013-2014, and how much (in dollars) of those purchases were locally produced. Estimates are perfectly acceptable, so please don’t spend excessive amounts of time doing the calculations. That said, if you already have that information, it will help to have it handy before you start.

The questionnaire does not include any personal information. However, we must inform you that your responses are not confidential and are not covered by the Confidential Information Protection and Statistical Efficiency Act of 2002. USDA will treat all information gathered in accordance with the Freedom of Information Act (5 U.S.C. 552).

Again, many thanks!

Deborah Kane
National Director, USDA Farm to School Program

2015 USDA FARM TO SCHOOL CENSUS Page 1
* Questions 1 and 2 are required questions.

1. School district identification *

   Email address of respondent:

   School district name (Please print complete district name without abbreviation.):

   State or territory:

   5 digit zip code for school district mailing address:

   ID number assigned to your school district by your State Agency (If known.):

2. Farm to school activities generally center around procurement of local or regional foods and food, agriculture or nutrition-based educational activities such as but not limited to:

   ● Serving local food products in school (meals and snacks)
   ● Serving local food products in classrooms (snacks, taste tests, educational tools)
   ● Conducting educational activities related to local foods such as farmers in the classroom and culinary education focused on local foods, field trips to farms, farmers’ markets or food processing facilities, and educational sessions for parents and community members
   ● Creating and tending school gardens (growing edible fruits and vegetables)

Based on the definition above, did your district or any schools in your district participate in farm to school activities during the 2013-2014 school year? (Please check one.) *

   • Yes  SKIP TO QUESTION 10 ON PAGE 8
   • No, but started activities in 2014-2015 school year  SKIP TO QUESTION 3 ON PAGE 3
   • No, but plan to start activities in the future  SKIP TO QUESTION 6 ON PAGE 5
   • No activities currently and no plans for the future  SKIP TO QUESTION 9 ON PAGE 7
If the answer to Question 2 is "No, but started activities in 2014-2015 school year", please proceed to these questions:

3. Which of the following benefits have you enjoyed as result of participating in farm to school activities? (Please check all that apply.)
   - Reduced food waste
   - Lower school meal program costs
   - Greater acceptance of the new meal pattern
   - Increased participation in school meals
   - Greater community support for school meals
   - Other: (please specify)

4. How does your district define "local" as it relates to your food procurement? (Please check one.)
   - Same city/county
   - Produced within a 50 mile radius
   - Produced within a 100 mile radius
   - Produced within a 200 mile radius
   - Produced within a day’s drive
   - Produced within the State
   - Produced within the region
   - Geographic along with other restrictions
   - Other: (please specify)

5. What activities are you starting this school year (2014-2015)? (Please check all that apply.)
   - Serving locally produced foods in the cafeteria
   - Serving locally produced foods as a Smart Snack (a la carte, as fundraisers, etc.)
• Serving locally produced foods or providing farm to school activities as part of afterschool programs
• Serving products from school-based gardens or school-based farms in the cafeteria
• Holding taste tests/cooking demonstrations of locally produced foods in the cafeteria, classroom or other school-related setting
• Holding taste tests/demos of products from school-based gardens or school-based farms in the cafeteria, classroom or other school-related setting
• Using Smarter Lunchroom strategies to encourage student selection and consumption of locally produced foods (e.g., product placement, food prompts, creative signage, etc.)
• Using cafeteria food coaches to promote the consumption of local foods (e.g. adults or students in the cafeteria encouraging kids to eat healthy/local foods)
• Using USDA Team Nutrition materials (such as The Great Garden Detective Adventure or Dig In!) as part of taste testing or educational activities
• Conducting edible school gardening or orchard activities as part of a school curriculum
• Conducting edible school gardening or orchard activities as part of an after school program
• Conducting student field trips to farms or orchards
• Having farmer(s) visit the cafeteria, classroom or other school-related setting
• Promoting local efforts through themed or branded promotions (e.g. Harvest of the Month, Local Day, Taste of Washington, etc.)
• Promoting locally produced foods at school in general (e.g. via cafeteria signs, posters, newsletters, etc.)
• Generating media coverage of local foods being used in schools (e.g. press interviews or other activities that resulted in local coverage)
• Hosting farm to school related community events (e.g. invited parents to lunch, corn shucking contests, etc.)
• Celebrating Farm to School Month (October 2014)
• Integrating farm to school concepts, including school gardening activities, into educational curriculum (math, science, language arts, etc.)
• Providing training to school food service staff on farm to school or school gardens
• Working with local food producers to develop a specific food product using local foods
• Implementing farm to school activities as part of overall school efforts to reduce food waste
• Evaluating changes in student acceptance and food waste as a result of implementing farm to school activities
• Other: (please specify)
Thank you for completing the 2015 Farm to School Census! For more information on starting or expanding farm to school activities, please see the new USDA Farm to School Planning Toolkit at http://www.fns.usda.gov/farmtoschool/census/#/toolkit.

Questions or comments? Please contact Matthew Benson with the USDA Farm to School Program at matthew.benson@fns.usda.gov.
If the answer to Question 2 is "No, but plan to start activities in the future", please skip to these questions:

6. Which of the following benefits do you perceive as result of participating in farm to school activities? (Please check all that apply.)

- Reduced food waste
- Lower school meal program costs
- Greater acceptance of the new meal pattern
- Increased participation in school meals
- Greater community support for school meals
- Other: (please specify)

7. What activities are you planning to start in the future? (Please check all that apply.)

- Serving locally produced foods in the cafeteria
- Serving locally produced foods as a Smart Snack (a la carte, as fundraisers, etc.)
- Serving locally produced foods or providing farm to school activities as part of afterschool programs
- Serving products from school-based gardens or school-based farms in the cafeteria
- Holding taste tests/cooking demonstrations of locally produced foods in the cafeteria, classroom or other school-related setting
- Holding taste tests/demos of products from school-based gardens or school-based farms in the cafeteria, classroom or other school-related setting
- Using Smarter Lunchroom strategies to encourage student selection and consumption of locally produced foods (e.g., product placement, food prompts, creative signage, etc.)
- Using cafeteria food coaches to promote the consumption of local foods (e.g. adults or students in the cafeteria encouraging kids to eat healthy/local foods)
- Using USDA Team Nutrition materials (such as The Great Garden Detective Adventure or Dig in!) as part of taste testing or educational activities
- Conducting edible school gardening or orchard activities as part of a school curriculum
- Conducting edible school gardening or orchard activities as part of an after school program
- Conducting student field trips to farms or orchards
- Having farmer(s) visit the cafeteria, classroom or other school-related setting
• Promoting local efforts through themed or branded promotions (e.g. Harvest of the Month, Local Day, Taste of Washington, etc.)
• Promoting locally produced foods at school in general (e.g. via cafeteria signs, posters, newsletters, etc.)
• Generating media coverage of local foods being used in schools (e.g. press interviews or other activities that resulted in local coverage)
• Hosting farm to school related community events (e.g. invited parents to lunch, corn shucking contests, etc.)
• Celebrating Farm to School Month
• Integrating farm to school concepts, including school gardening activities, into educational curriculum (math, science, language arts, etc.)
• Providing training to school food service staff on farm to school or school gardens
• Working with local food producers to develop a specific food product using local foods
• Implementing farm to school activities as part of overall school efforts to reduce food waste
• Evaluating changes in student acceptance and food waste as a result of implementing farm to school activities
• Other: (please specify)

8. When do you plan to start participating in farm to school?

Thank you for completing the 2015 Farm to School Census! For more information on starting or expanding farm to school activities, please see the new USDA Farm to School Planning Toolkit at http://www.fns.usda.gov/farmtoschool/census/#/toolkit.

Questions or comments? Please contact Matthew Benson with the USDA Farm to School Program at matthew.benson@fns.usda.gov.
If the answer to Question 2 is "No activities currently and no plans for the future", please skip to these questions:

9. Are any of the following considered to be problems in procuring local products or reasons why your district does not purchase local products? (Please check all that apply.)

- Local producers aren’t bidding
- Hard to find year-round availability of key items
- Hard to coordinate procurement of local with regular procurement
- Local items not available from primary vendors
- Vendors for local items don’t offer a broad range of products
- Higher prices
- Unstable product prices
- Lack of reliability in delivering ordered items
- Lack of kitchen equipment to process/prepare local foods
- GAP or other food safety requirements
- Lack of compliance with your institution’s purchasing regulations and policies
- Lack of availability of processed/precut products
- Hard to find new suppliers/growers or distributors
- Hard to get information about product availability
- Hard to place orders with vendors
- Getting on-time deliveries
- Getting product delivered that meets your quality requirements & other specs (i.e., size)
- Having quantity delivered equal to quantity ordered
- Resolving problem deliveries
- Inability to pay farmers according to farmers’ needs due to school district payment procedures
- Other: (please specify)

Thank you for completing the 2015 Farm to School Census! For more information on starting or expanding farm to school activities, please see the new USDA Farm to School Planning Toolkit at http://www.fns.usda.gov/farmtoschool/census/#/toolkit.
Questions or comments? Please contact Matthew Benson with the USDA Farm to School Program at matthew.benson@fns.usda.gov.
If the answer to Question 2 is “Yes”, please skip to these questions:

10. Which of the following benefits have you enjoyed as result of participating in farm to school activities? (Please check all that apply.)
   • Reduced food waste
   • Lower school meal program costs
   • Greater acceptance of the new meal pattern
   • Increased participation in school meals
   • Greater community support for school meals
   • Other: (please specify)

11. During the 2013-2014 school year, what age groups participated in farm to school activities? (Please check all that apply.)
   • Pre-K
   • K through 5th grade
   • 6th grade through 8th grade
   • 9th grade through 12th grade
   • Other: (please specify)

12. Are you participating in the Child and Adult Care Food Program (CACFP)? (Please check one.)
   • Yes
   • No
   • I don’t know

13. To the best of your knowledge, approximately how many schools within the district participated in any farm to school activities during the 2013-2014 school year?
14. To the best of your knowledge, approximately how many schools had **edible school gardens** during the 2013-2014 school year?

15. To the best of your knowledge, approximately how many schools had **salad bars** during the 2013-2014 school year?

16. How does your district define “local” as it relates to your food procurement? (Please check one.)

- Same city/county
- Produced within a 50 mile radius
- Produced within a 100 mile radius
- Produced within a 200 mile radius
- Produced within a day’s drive
- Produced within the State
- Produced within the region
- Geographic along with other restrictions
- Other: (please specify)

17. Please indicate whether your district or any schools in your district used local products **IN ANY FORM** (fresh, minimally processed, or processed) for any of the following federal nutrition programs during the 2013-2014 school year. (Please check all that apply.)

- Breakfast
- Lunch
- Supper
- Snacks
  - Fresh Fruit and Vegetable Program
- CACFP (i.e., in a pre-k setting such as Head Start, etc.)
• CACFP At-risk Afterschool
• Summer meals (i.e., meals in the Summer Food Service Program, in Seamless Summer, or in the NLSP under accredited summer school programs)
18. For the 2013-2014 school year, please indicate whether your district obtained local foods DIRECTLY from the following sources. (Please check all that apply.)

• Direct from individual food producers (i.e. farmers, fishers, ranchers)
• Direct from farmer, rancher or fisher cooperatives
• Direct from farmers markets
• Via a Community Supported Agriculture (CSA) model
• Direct from food processors and manufacturers

19. For the 2013-2014 school year, please indicate whether your district obtained local foods from any of the following INTERMEDIARY sources. (Please check all that apply.)

• Distributors
• Food buying cooperative
• Food hub
• Food service management companies
• DoD Fresh Program vendors
• USDA Foods
• State Farm to School Program office
• Other: (please specify)
20. Please indicate if your district or any schools in your district purchased any of the following foods – IN ANY FORM – from local growers/producers/processers/manufacturers during the 2013-2014 school year or would like to in the future.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Not now, but would like to in the future</th>
<th>I don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fluid Milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Dairy</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Meat/poultry</td>
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<tr>
<td>Eggs</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Seafood</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Plant-based protein items such as beans, seeds, nuts</td>
<td></td>
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<tr>
<td>Grains and flour</td>
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<tr>
<td>Bakery products</td>
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<tr>
<td>Herbs</td>
<td></td>
<td></td>
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<tr>
<td>Other product type: (please specify)</td>
<td></td>
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</tbody>
</table>

21. Please list the top 5 SPECIFIC food items (e.g. apples, chicken drumsticks) your school district purchased locally in 2013-2014, based on VALUE.

<table>
<thead>
<tr>
<th>Name of item</th>
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</thead>
<tbody>
<tr>
<td>Food item #1:</td>
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<tr>
<td>Food item #2:</td>
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<td>Food item #3:</td>
</tr>
<tr>
<td>Food item #4:</td>
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<tr>
<td>Food item #5:</td>
</tr>
</tbody>
</table>
22. On average, about how frequently do your district’s meals or snacks include at least one locally sourced food item from the categories below?

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>A few times per week</th>
<th>Weekly</th>
<th>A few times per month</th>
<th>Monthly</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
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<td></td>
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<tr>
<td>Fluid milk</td>
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<tr>
<td>Other Dairy</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other product type: (please specify)</td>
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</tr>
</tbody>
</table>

The following questions ask how much money you spent on food and local food during the 2013-2014 school year. Please give your best approximation and do not include USDA Foods or DOD Fresh.

23. For the 2013-2014 school year, what were your approximate total food costs (in dollars)?

TOTAL food costs (Please round to the nearest dollar. Do not count USDA Foods/DOD Fresh.): $____

24. For the 2013-2014 school year, about how much of your total food purchases (in dollars) were spent on local foods INCLUDING fluid milk? (If you’re not sure, a rough estimate is perfectly acceptable.)

LOCAL food costs (Please round to the nearest dollar. Do not count USDA Foods/DOD Fresh.): $____
25. For the 2013-2014 school year, about how much of your total food purchases (in dollars) were spent on local foods NOT INCLUDING fluid milk? (If you're not sure, a rough estimate is perfectly acceptable.)

| LOCAL food costs (Please round to the nearest dollar. Do not count USDA Foods/DOD Fresh): | $ |

26. Looking forward, do you anticipate your local purchases will (Please check one):

- Increase
- Decrease
- Stay the same
- I don't know
- Other: (please specify)

27. To the best of your knowledge, please check the activities that any of your district’s schools engaged in during school year 2013-2014. (Please check all that apply.)

- Serving locally produced foods in the cafeteria
- Serving locally produced foods as a Smart Snack (a la carte, as fundraisers, etc.)
- Serving locally produced foods or providing farm to school activities as part of afterschool programs
- Serving products from school-based gardens or school-based farms in the cafeteria
- Holding taste tests/cooking demonstrations of locally produced foods in the cafeteria, classroom or other school-related setting
- Holding taste tests/demos of products from school-based gardens or school-based farms in the cafeteria, classroom or other school-related setting
- Using Smarter Lunchroom strategies to encourage student selection and consumption of locally produced foods (e.g., product placement, food prompts, creative signage, etc.)
- Using cafeteria food coaches to promote the consumption of local foods (e.g. adults or students in the cafeteria encouraging kids to eat healthy/local foods)
- Using USDA Team Nutrition materials (such as The Great Garden Detective Adventure or Dig in!) as part of taste testing or educational activities
- Conducting edible school gardening or orchard activities as part of a school curriculum
- Conducting edible school gardening or orchard activities as part of an after school program
- Conducting student field trips to farms or orchards
• Having farmer(s) visit the cafeteria, classroom or other school-related setting
• Promoting local efforts through themed or branded promotions (e.g. Harvest of the Month, Local Day, Taste of Washington, etc.)
• Promoting locally produced foods at school in general (e.g. via cafeteria signs, posters, newsletters, etc.)
• Generating media coverage of local foods being used in schools (e.g. press interviews or other activities that resulted in local coverage)
• Hosting farm to school related community events (e.g. invited parents to lunch, corn shucking contests, etc.)
• Celebrating Farm to School Month (October 2013)
• Integrating farm to school concepts, including school gardening activities, into educational curriculum (math, science, language arts, etc.)
• Providing training to school food service staff on farm to school or school gardens
• Working with local food producers to develop a specific food product using local foods
• Implementing farm to school activities as part of overall school efforts to reduce food waste
• Evaluating changes in student acceptance and food waste as a result of implementing farm to school activities
• Other: (please specify)

28. Are any of the following considered to be problems in procuring local products or reasons why your district does not purchase even more local products? (Please check all that apply.)

• Local producers aren’t bidding
• Hard to find year-round availability of key items
• Hard to coordinate procurement of local with regular procurement
• Local items not available from primary vendors
• Vendors for local items don’t offer a broad range of products
• Higher prices
• Unstable product prices
• Lack of reliability in delivering ordered items
• Lack of kitchen equipment to process/prepare local foods
• GAP or other food safety requirements
• Lack of compliance with your institution’s purchasing regulations and policies
• Lack of availability of processed/precut products
• Hard to find new suppliers/growers or distributors
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• Getting product delivered that meets your quality requirements & other specs (i.e., size)
• Having quantity delivered equal to quantity ordered
• Resolving problem deliveries
• Inability to pay farmers according to farmers’ needs due to school district payment procedures
• Other: (please specify)
29. Is there other information that was not asked for that you think we need to know?


30. Please share a local food procurement success story. (Optional)


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