



FARM to SCHOOL
★ MISSOURI ★

FY2018-19 Report

Thanks to our content reviewers: Madeline Berwanger, Lisa Farmer, Lorin Fahrmeier, and Taylor Tuttle. Missouri Farm to Institute Project Coordinator: Lorin Fahrmeier. Writer: Robin G. Walker, PhD.

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Background

The term **locally grown** is defined as produced within the state (branded as “Missouri Grown”) or no farther than 30 miles across state lines.

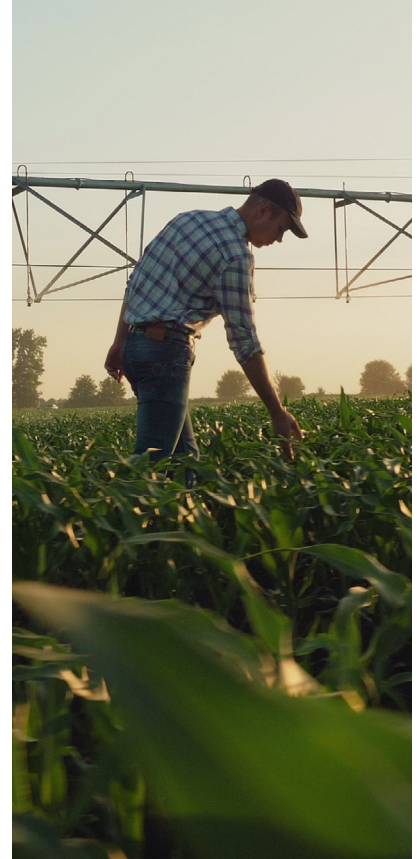
In 2014, the Missouri Legislature created a Farm to Table Program “to connect Missouri farmers and schools in order to provide schools with locally grown agricultural products for inclusion in school meals and snacks and to strengthen local farming economies.” The target for the voluntary program: Institutions in the state would purchase 10% of their food from Missouri sources (State of Missouri, 2016).

Under the Farm to Table umbrella is the Missouri Farm to School (F2S) program. F2S programs share three core elements:

1. classroom education in food, agriculture, health, and nutrition;
2. edible school gardens with hands-on learning activities; and
3. school procurement of fresh foods from local farmers.

Many studies have shown many positive outcomes of F2S programs: in public health, education, economic development, and environmental impact (FarmtoSchool.org, 2017a, b).

The State of Missouri is a core partner of the National Farm to School Network.



Participation

Missouri respondent data in the [2015 USDA Farm to School \(F2S\) Census](#) revealed that 143 School Food Authorities (SFAs) participated in Farm to School, reaching about 431,990 students in 911 schools. Across two academic years, 71% of the F2S programs served locally produced foods; 9% integrated F2S concepts into curriculum for math, science, health or language arts; and 13% conducted edible gardening activities as part of the school curriculum.

Expanding Markets for Missouri Grown Products

Because more Missourians could benefit from a Farm to Table initiative, efforts are underway to expand F2S to more PreK-12 public, private and charter schools. Further, with some planning, locally grown programs can be launched in day cares, after school programs, summer feeding programs, colleges, hospitals, prisons, military bases, long-term care facilities, businesses, and other institutions. The potential for positive impact on family health and local economies is tremendous.

Food Policy, System Change, and the Environment

The long-range aim of the national F2S initiative is to “create sound policies and practices that will lead to local, equitable food systems that support family nutrition, local economies, and the environment,” often referred to as a community food system model (NSFN, 2017). Toward this end, the University of Missouri Extension, together with other state and nonprofit entities, work in the areas of health and nutrition education, food safety, food policy, procurement, workforce training, and economic development.

Task Force

Guiding the statewide F2S effort is the Missouri Farm to Table Task Force. Task Force designees include the University of Missouri Extension Service; Department of Agriculture; Department of Corrections; Department of Health and Senior Services; Department of Elementary and Secondary Education; Office of Administration; and one representative from a military base in the state. Also appointed are a person actively engaged in small agribusiness; a school food service director; a correctional facility food service director; a food service director from a hospital or nursing home; and a registered dietician (State of Missouri, 2016).

Missouri By the Numbers

According to the [USDA Farm to School \(F2S\) Census](#), by the 2013–2014 school year, 124 Missouri School Food Authorities (SFAs) had started Farm to School programs. The following year, participation grew by 15%. In the coming years, the number of F2S programs is expected to grow by at least 50% (USDA, 2015).

The 2013–2014 F2S respondents were asked, “What age groups participated in F2S activities?” Thirty-four percent of the schools included PreK programs; 84% engaged K–5 students; 74% were in grades 6–8; and about half (55%) extended F2S to grades 9–12 (USDA, 2015).

What age groups participated in F2S activities?	
PreK	
Grades K–5	
Grades 6–8	
Grades 9–12	

We have red lettuce, leaf romaine, 7 blend salad mix, and spinach that we have grown from seeds this spring. Even more exciting is that we have been serving garden fresh salads to the children and they LOVE it!

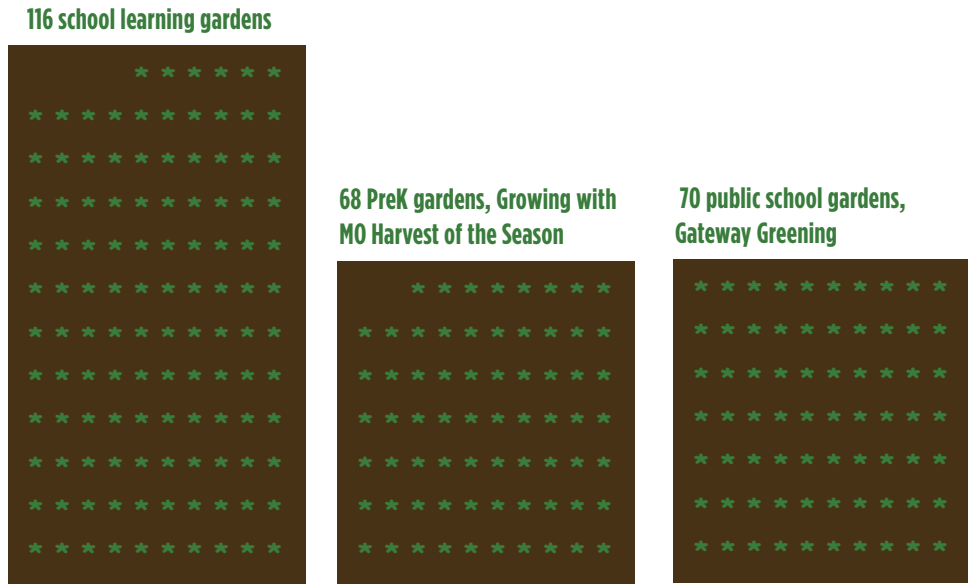
– Educator, Little Explorers Learning Center, Perryville

Three-fourths of the SFAs served locally produced foods for federal nutrition programs. Of those, 48% did so at breakfast, 81% at lunch, 19% at snack time, and 4% for supper. Twenty-three percent served local foods as part of USDA’s fresh fruit and vegetable program to combat childhood obesity while 27% served local foods in summer food service programs. About one quarter (23%) of the SFAs offered locally sourced fruits and vegetables every day; 41% offered local fluid milk daily and 12%, local meat and poultry daily (USDA, 2015).

SFAs serving locally produced foods by meal	
Breakfast	
Lunch	
Snack	
Supper	

SFAs serving locally produced foods by food	
Fruits and vegetables	
Fluid milk	
meat and poultry	

Several outcome studies indicate that garden-based nutrition education encourages student consumption of fruits and vegetables at school and at home (NFSN, 2017). The F2S Census data identified 116 school learning gardens (USDA, 2015) while Growing with MO Harvest of the Season has help launched 68 PreK gardens (DHSS, 2019). A nonprofit group, Gateway Greening, supports 70 public school gardens in the greater St. Louis area; some of those SFAs, like the Ferguson-Florissant school district, participate in other F2S activities (Herleth, 2019).



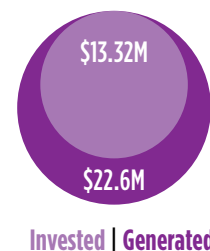
Economic Benefits to Missouri Schools.

Of the 124 SFAs reporting for 2013–2014, 23% indicated that they were able to lower school meal program costs; 16% reduced food waste; 20% increased participation in school meals; and 33% found greater community support for school meals (USDA, 2015).

Economic benefit to Missouri Schools	
Lowered meal program costs	23%
Reduced food waste	16%
Increased participation	20%
Increased community support	33%

Economic Benefit to Missouri Communities

During that same year, participating SFAs (n=124) invested a total of \$13,320,000 in local foods, including fluid milk. Using a multiplier effect of 1.7, local purchases by those SFAs potentially generated 22.6 million in economic activity for those local areas (USDA, 2015; IMPLAN, 2016).



Economic Benefit to Farmers

More than one third (35%) of the 2013–14 reporting SFAs indicated that they purchase local food directly from farmers, ranchers, producers; 10% from producer cooperatives, and 15% from farmers’ markets. About 10% work directly with local producers to develop a specific product. Sixty-six percent purchased Missouri Grown foods from distributors and other vendors. Nearly half (43%) of the SFAs active in F2S have plans to increase local purchases in the future while 30% planned to sustain purchases at the same level. Among those who were not participating in Farm to School in 2013–2014, less than 10% planned to purchase locally in the future (USDA, 2015).

SFAs planning to purchase locally in the future	
F2S participants	
Other SFAs	

Types of Local Purchases

On average, the SFAs spent about five percent of their total food budget on local purchases. In 2013–2014, 73% of the reporting SFAs purchased local fruits and vegetables; 40%, local fluid milk; 18%, local eggs; and 16%, local meat and poultry. By product value, SFAs spent the most on local apples, tomatoes, and lettuce (USDA, 2015).

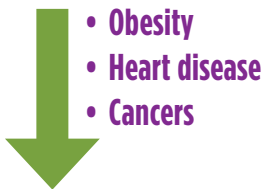
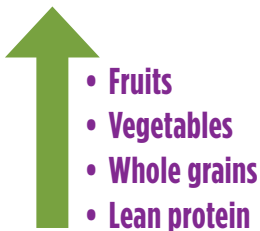
Farm to School Challenges and Opportunities

CHALLENGE: Poor nutrition can lead to obesity, heart disease, and some cancers. On average, about 45% of adolescents eat less than one serving of fruits and vegetables each day. About 27% of Missouri youth ages 10-17 are already overweight or obese, as are 32% of children ages 1-4 in WIC programs (CDC, 2017; MICA, 2016; NSCH, 2016-17).

OPPORTUNITIES: Research shows that F2S increases students' healthy food choices (FarmtoSchool.org, 2017; Berezowitz, et. al, 2015). By expanding F2S, more PreK-12 students will participate in school meals that include fruits, vegetables, whole grains, and lean protein (USDA, 2015). This includes the 576,771 Missouri children participating in the National School Lunch Program (USDA, 2018). Missouri is well positioned with existing resources and partnerships to support the expansion of F2S. For example, the University of Missouri Extension provides educational materials and technical assistance to local schools that are interested in launching a F2S program. The Department of Health and Senior Services (DHSS) supports nutrition and wellness in PreK early care and education settings. DHSS also administers the Child and Adult Care Food Program which provides which provides reimbursement for nutritious meals and snacks in childcare centers, family childcare homes, after school programs, and emergency shelters.

CHALLENGE: More than half of reporting School Food Authorities perceive problems with year-round availability of key items (USDA, 2015).

OPPORTUNITIES: SFAs have plentiful access to fresh, locally grown produce in the summer, but they need to think creatively about the winter months. For example, a fall season product, like apples, can be eaten fresh, placed in cold storage for 6 months, dehydrated, or frozen as a sauce. Missouri commodities like meat, eggs, dairy, and rice can be purchased any time of year. To enable more farmers and schools to participate in Farm to School, the Missouri Agriculture and Small Business Development Authority (MASBDA) offers "value added" grants that help with food safety certification, processing equipment, and storage challenges.



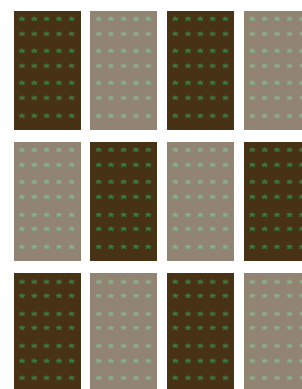
Grants and small agribusiness loans are available to construct greenhouses or hydroponic systems that can extend the growing season for Missouri fruits and vegetables. DHSS provides culinary training and technical assistance to schools that enable food nutrition professionals to better utilize fresh Missouri Grown produce.

CHALLENGE: School Food Authorities with no intention to join F2S perceive many barriers to success, including difficulty finding farmers and ranchers with locally grown products (USDA, 2015).

OPPORTUNITIES: The Farm to Table Task Force is working to address these and other challenges. For example, about 70% of Missouri SFAs do not define “locally grown” correctly (USDA, 2015) which limits their approach to sourcing. Workshops and revised marketing materials will help SFAs understand that “locally grown” means products grown or raised within the state of Missouri or no farther than 30 miles across state borders. The Missouri Department of Agriculture (MDA) hosts [Missouri Grown USA](#) to market local products from 500+ farmers across the state. Extension and MDA work with farmers’ markets, commodity groups, and distributors to build a strong F2S network in the state. Here’s a great example from MDA: The [MOBEEF for MOKIDS](#) initiative.

CHALLENGE: Missouri has more than 700 School Food Authorities, but only 116 learning gardens (USDA, 2015).

OPPORTUNITIES: Anecdotally we know that more schools have gardens, but several SFAs failed to respond to the USDA Census. In-state follow-up will be required for the next Census. State agencies and nonprofits plan to hold workshops and market their extensive collections of educational garden materials to teachers, food service personnel, and PreK–12 students. University of Missouri Extension can mobilize their Master Gardeners to serve as school “consultants” on edible gardens. Local garden clubs can be recruited to help start container gardens. The Department of Health and Senior Services offers an edible garden program for PreK settings.



F2S Making an Impact: Four Success Stories

Farm to School in Ferguson-Florissant School District



With a \$91,000 Farm to School Grant, this district hired high school students to prepare produce from local farms to serve at 24 schools. (Bouscaren, 2015). The district, located just outside of St. Louis, also offers Farm to School educational programs and six school gardens. In the 2013–2014 academic year, District expenditures on local foods was \$400,000, about 15% of its total food budget. Given the multiplier effect of 1.7 (IMPLAN, 2016) the expenditures potentially generated \$680,000 in local economic activity.

Benefits:

Public health, education, workforce training, and economic development.

The Missouri Culinary Skills Institute



The Missouri Culinary Skills Institute (CSI) provides hands-on culinary training designed to increase student acceptance of school meals and improve the health status of PreK–12 students. To date, 49 training sessions, led by a nutritionist and a chef, have advanced the knowledge and skills of 203 school nutrition professionals across the state. A majority of the graduates (75%) reported adopting CSI recipes that are low sugar, low fat, low sodium, and/or incorporate fresh Missouri Grown products. DHSS works with the Department of Elementary and Secondary Education and the Missouri School Nutrition Association to meet the professional development needs of school nutrition professionals.

Benefits:

Public health, education, workforce training, economic development, and environmental.

Learn more:

<https://health.mo.gov/living/wellness/nutrition/culinaryskills>



Missouri Farm to School Contacts:

University of Missouri Extension, Human Environmental Sciences

Contact: Lorin Fahrmeier
fahrmeierl@missouri.edu
573.882.9760

Missouri Department of Agriculture

Contact: Christi Miller
Christi.Miller@mda.mo.gov
573.522.4170

Missouri Department of Elementary & Secondary Education

Contact: Barbara Shaw
Barbara.Shaw@dese.mo.gov
573.751.1920

Missouri Department of Health & Senior Services

Contact: Lisa Farmer
Lisa.Farmer@health.mo.gov
816.521.7740

Learn more about the impact of F2S programs in Missouri
<https://extension2.missouri.edu/programs/missouri-farm-to-school/about-missouri-farm-to-school>

MO F2S Report References

Berezowitz, CK., Bontrager, AB, Yoder MM, Dale A. Schoeller,DA. (2015) School Gardens Enhance Academic Performance and Dietary Outcomes in Children.

Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/josh.12278>

Bouscaren, D. (2015). NPR story: Farm to School grant brings in more fresh food to Ferguson-Florissant district.

Retrieved from <https://news.stlpublicradio.org/post/farm-school-grant-brings-more-fresh-food-ferguson-florissant-district#stream/0>

Centers for Disease Control and Prevention. (2017) Nutrition, Physical Activity, and Obesity: Data, Trends and Maps. Search Missouri fruits & Vegetables – Behavior.

Retrieved from https://nccd.cdc.gov/dnpao_dtm/rdPage.aspx?rdReport=DNPAO_DTM.ExploreByLocation&rdRequestForwarding=Form

Farm to School.org (2017a). Benefits of Farm to School.

Retrieved from <http://www.farmtoschool.org/resources-main/the-benefits-of-farm-to-school>

Farm to School.org (2017b). Economic Impacts of Farm to School.

Retrieved from <http://www.farmtoschool.org/Resources/EconomicImpactReport.pdf>

Herleth, L. (2019). Gateway Greening supports 70 St. Louis public school gardens.

Email correspondence 07.31.2019.

IMPLAN (2016). Economic Impact Analysis for Planning. Site: <https://www.implan.com/>

Note: IMPLAN's economic multiplier for Missouri was obtained through ag economists at the University of Missouri.

MICA. (2016) Missouri Information for Community Assessment (2016).

Data retrieved from the Department of HSS: <https://healthapps.dhss.mo.gov/MoPhims/QueryBuilder>

NSCH. (2016–2017). National Survey of Children's Health

Retrieved from <https://www.childhealthdata.org/learn-about-the-nsch/NSCH>

State of Missouri. (2016). Section 262.096, RSMO; Section 262.962, RSMO

Retrieved from <http://revisor.mo.gov/main/OneChapter.aspx?chapter=262>

US Department of Agriculture, Food and Nutrition Service. (2015). Farm to School Census.

Retrieved from <https://farmtoschool Census.fns.usda.gov>

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Notes

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