

Executive Summary

Farm to school programs, which link local farmers with schools, have increased in number, from fewer than ten in 1997 to more than an estimated 2,000 programs in 2008. With this phenomenal increase, many in the farm to school movement are faced with the question: what are the specific impacts of the program? Funding agencies, advocates and policy makers grapple with this question as they consider farm to school programs as a model to improve school nutrition and farm profitability. While it may seem intuitive that linking students with local foods would lead to positive outcomes in student dietary intake and farm income, well-designed evaluations and research projects are needed to examine impacts on student health, dietary behaviors, school district policies, local farm profitability, and other aspects of the community at large.

It can be difficult to plan farm to school evaluations given the variety of program components and goals. Farm to school programs inherently involve numerous stakeholders and partners, and these different parties ask a diverse range of questions, which may be too many to evaluate depending upon available resources and data. Food service directors assessing the impacts of farm to school programs question financial viability issues as well as impacts on children's knowledge, attitudes, and behaviors regarding healthy eating. For farmers, transportation and distribution issues are questions of interest. Health and nutrition professionals are concerned about fruit and vegetable consumption as well as weight and /or BMI (body mass index) outcomes. With the farm to school model being interpreted and implemented in a plethora of ways, it is difficult to devise common evaluation indicators that are relevant to programs across the spectrum. For this reason, generalizations based on results from a specific program evaluation may not be directly applicable to other programs.

Definition of Farm to School

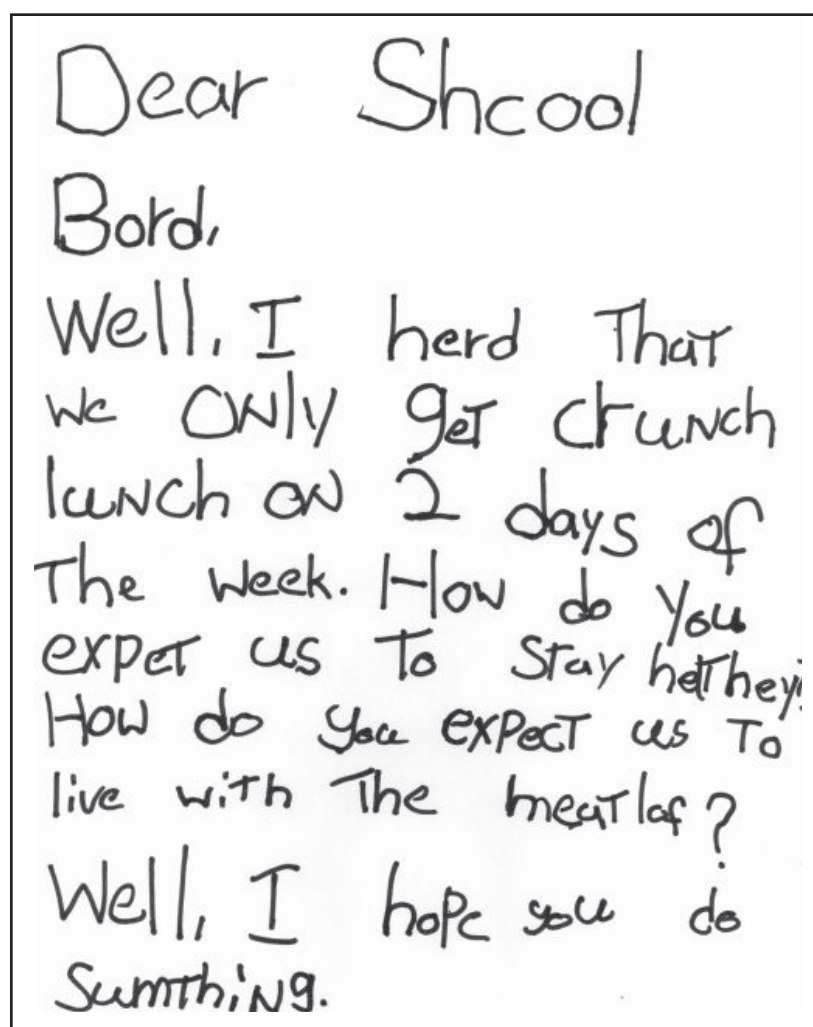
For the purpose of this report, "farm to school" is broadly defined as a school-based program that connects schools (K-12) and local farms with the objectives of serving healthy meals in school cafeterias, improving student nutrition, providing agriculture, health and nutrition education opportunities, and supporting local and regional farmers. The definition of "local" or "regional" farms or food is flexible and varies. Some interpret "local" according to political/geographic boundaries ranging from a city to a state or a region. Others suggest the ecoregion or bioregion size.ⁱ This lack of a common definition presents challenges for comparing evaluation results.

ⁱ "Local food," Wikipedia, http://en.wikipedia.org/wiki/Local_food#_ref-0, accessed April 2008.

Given the challenges of evaluating farm to school programs, this report is intended as a resource guide for planning farm to school evaluations. Drawing upon tools and methods that have been used or have the potential to be used for evaluating program impacts, the report includes a compilation of existing farm to school evaluations, making comparisons where appropriate, and placing them in context when possible. The aim of this comprehensive summary of key evaluation results from farm to school projects is to facilitate the refinement of farm to school programs and their assessments to maximize positive impacts on student diets, farm viability, school meal and snack offerings, and educational programs.

Farm to school programs purchase locally and feature farm fresh foods such as fruits and vegetables, eggs, grains, honey, meat, and beans on their menus. Other programs may use these products in the classroom for education,

incorporate nutrition-based curriculum, and provide students experiential learning opportunities through farm visits, gardening, and recycling programs. This relationship with area schools gives farmers access to a new market, as well as provides an opportunity to connect with the community and educate children about local food and sustainable agriculture. Most cafeteria components of farm to school programs focus on the lunch program with some programs including breakfast and snack programs. Studies reviewed in this report undertook interventions that integrated local purchasing of food products along with one or more of the farm to school components listed above. The resources and reviews of farm to school evaluations presented in this report are based on the information available to us in 2007. Additional data and resources on the topic may have become available since then.



Dear Shcool
Board,
Well, I herd That
we ONLY get crunch
lunch on 2 days of
The week. How do you
expect us to stay hettthey?
How do you EXPECT us to
live with The meatlaf?
Well, I hope you do
Sumthing.

Letter from a student at Davis Joint Unified School District
(DJUSD) to the School Board supporting the "Crunch Lunch"
- the DJUSD Farm to School Salad Bar Program

This report is organized into five sections as follows:

- ▶ The **introduction** provides brief guidance on planning for program evaluations and establishes the terminology used throughout the report. The section describes a range of farm to school outcomes from baseline/existing program information to impacts on *students, teachers, policies, food service, farmers, parents, and communities*.
- ▶ The **resources and tools** section delves into more detail about the range of outcomes of interest for farm to school program stakeholders, citing examples of tools used by farm to school programs to evaluate program impacts.
- ▶ The **literature review** catalogues all the farm to school evaluation studies referenced in this report. The section includes a summary of findings on the outcomes mentioned in previous chapters. Studies reviewed for this report show that farm to school programs have contributed positively to students' knowledge,^{10,26-28,42-44,51} attitudes,^{10,14,42,45-46,86} and behaviors toward local, healthy food,^{14,18-20,28,43-49,86} promoted healthier dietary choices and increased consumption of fruits and vegetables; as well as demonstrated modest increases in farm incomes.^{14,18-19,46-47,52,81-83,88} Evaluations have also shown that programs influence teacher knowledge and attitudes^{14,28,43,44-46,52-53} but face challenges in becoming financially self-sustaining^{18-19,80} and in demonstrating broader impacts on the local food economy. See Table 1 on page 8 for a summary of key findings on the impacts of farm to school programs, as evident from data referenced for this report. Where data was relevant and available, comparative research studies have been cited from non-farm to school research to place our findings in the broader context of school food research.
- ▶ The **conclusions and recommendations** section elaborates on the emerging trends from evaluations of farm to school programs conducted while providing suggestions for areas needing more work and research to fully understand the potential impacts of farm to school programs.
- ▶ An appendix of **program profiles and sample tools** is included as a resource for those planning farm to school programs and evaluations.

Table 1. A Summary of Farm to School Program Impactsⁱ

Impacts on	Indicator	Demonstrated Impacts
Students	Student knowledge <small>10,26-28,42-44,51</small>	Gains in knowledge and awareness about gardening, agriculture, healthy eating, local foods and seasonality
	Student attitudes ^{10,14,42,45-46,86}	Demonstrated willingness to try out new foods and healthier options
	Student behaviors ^{14,18-20,28,43-49,86}	Students choose healthier options in cafeteria; consume more fruits and vegetables through farm to school meals (+0.99 to +1.3 servings/day) and at home; consume less of unhealthy foods and sodas; reduce television watching time; positive lifestyle modifications such as a daily exercise routine
	Other student benefits ^{14,26-27,46,51}	Positive gains in phonological awareness of the alphabet, increased social skills, self-esteem
Teachers	Teacher attitudes/ behaviors ^{14,28,43,44-46,52-53}	Positive attitudes about integrating farm to school related information in curriculum, positive changes in teachers' diets and lifestyles.
Policy	Policy changes	Farm to School supportive policies, other health / nutrition policies enacted at school district, county or state levels, though policy development has not been assessed as an impact.
Food Service Costs, Revenue, Interest	Food service operations ^{18-20,45,47-49,80-82,87}	Farm to school cafeteria offerings serve more fruits and vegetables than regular meals; farm to school facilitates development of new seasonal recipes for use in school food service operations, and facilitates changes in cafeteria waste management policies.
	Food service staff interest ^{14,46}	Increase in knowledge and interest in local food preparation, gains in knowledge regarding seasonal recipes, interest in interacting with teachers to strengthen classroom-cafeteria connections
	School meal participation ^{18-20,45,47-49,80,83}	Increase in participation rates observed in the range of 3% to 16% due to farm to school programming
	Financial costs ^{18-20,45,49,60,80}	No clear indication on whether food costs for farm to school meals are higher; labor costs for preparing farm to school meals are higher
	Food service revenue ^{47,49,84}	Farm to school meals bring in additional revenues through increases in student and adult meal participation
	Local food procurement ^{14,18-20,44,46-47,49,52,60,80-85}	Purchases from local sources increase as the farm to school program matures towards institutionalization, may reach up to 50% of all produce purchases in season
Farmers	Farmer income ^{14,18-19,46-47,52,81-83,88}	Average income from farm to school represents up to 5% of all sales for individual farmers
	Farmer benefits ^{81,82}	Diversification of market, positive relationships with school district, parents and community; farmers contracted to plant crops for schools; opportunities to explore processing and preservation methods for institutional markets; establishment of grower collaboratives or cooperatives to supply institutional markets
Parents	Parent benefits ^{14,26-27,43-44,46,51}	Gains in ability and interest in incorporating healthier foods in family diets and guiding children to make healthier choices, positive changes in shopping patterns reflecting healthy and local foods
Community	Community benefits ^{14,46}	Awareness about local foods, interest in purchasing local foods, interest and awareness about foods served in school cafeterias.

ⁱ Information based on a literature review of farm to school evaluation studies as presented in the report "Bearing Fruit: Farm to School Program Evaluation Resources and Recommendations" by Joshi A and Azuma A M, National Farm to School Network, Center for Food & Justice, Occidental College, 2008. Please refer to the full report for data specifics and references.