


Existing and Potential Market Conditions for Farm to School Programs in Western North Carolina

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Introduction

- Farm to school (F2S) programs intend to connect schools with local farms
- Two types of studies related to F2S programs:
 - Ex-ante: feasibility studies
 - Ex-post: evaluation studies
 - From more than 2,000 F2S programs only 23 have been evaluated (Joshi and Azuma, 2009)
 - Most of evaluation research has focused on the SCHOOL side of F2S programs
 - Joshi and Azuma (2009): "concrete data on monetary and other benefits to FARMERS is scarce"



Introduction

Goal of the study

- Explores current situation and potential of F2S program from farmer's perspective
- Three F2S programs located in Western North Carolina are analyzed: Madison, Mitchell and Yancey counties School Districts
- Look at F2S as a market:
 - Demand side (schools): How big is the market?
 - Supply side (farmers): Land and resources needed and profitability
 - Connection of supply and demand: distribution issues



Background

- Schools:
 - Approximately 2,000 students
 - Average annual nutrition expenditures: ≈\$500/student
- F2S programs
 - Started: 2003, Yancey county, 1 farmer
 - Today: at least 5 counties in the region, numerous farmers
 - Most farmers are associated with MADISON FARMS (non-profit marketing cooperative)
 - 25 farmers in 2006 and 40 farmers in 2009
 - partially funded with grants and uses State Extension Facilities



How big is the market?

- Data used: expenditure data provided by Child Nutrition Directors

Madison, Mitchell and Yancey County Public Schools Expenditures on Fresh and Processed Fruits and Vegetables, 2006-07

Expenditure type	Madison	Mitchell	Yancey	Average	Total Region
	-----\$/student-----				\$-----
Total Nutrition	525.6	421.2	506.7	484.5	3,576,715
Fresh & Proc. Fruits and Veget.	36.2	19.5	23.6	26.4	196,904
Processed Fruits and Veget.	21.5	14.0	16.8	17.4	129,112
Fresh Fruits and Veget.	14.7	5.5	6.8	9.0	67,791
Locally Grown Produce	3.9	0.3	0.7	1.6	12,654



How big is the market?

- Current demand amount to \$12,654
- Demand for produce in general and locally grown, in particular, is concentrated in very few products:
 - Five produce categories account for 50% expenditures in produce (both local and imported)
 - Four products: apples, bibb lettuce, tomatoes and potatoes concentrate 73% of expenditures on locally grown produce

How big can the market get?

Current and Potential Expenditures on Locally Grown Products
by the Madison, Mitchell and Yancey School Districts (2006-2007)

Commodity	Expenditure (in dollars)		
	Locally Grown	Traditional Foodservice Provider	Total
Apples	3,500	7,737	11,237
Bell Peppers	201	466	667
Blueberries	360	0	360
Broccoli	511	2,525	3,036
Cabbage	329	1,645	1,974
Cantaloupe	470	1,573	2,044
Cauliflower	17	1,150	1,167
Cherry Tomatoes	380	72	452
Cucumbers	310	820	1,129
Green beans	0	1,428	1,428
Lettuce Bibb	2,751	0	2,751
Lettuce Iceberg	0	7,229	7,229
Potatoes	1,475	5,114	6,589
Sweet Potatoes	462	0	462
Tomatoes	1,471	5,037	6,508
Watermelons	345	632	977
Yellow Squash	72	49	121
Total	12,654	35,477	48,130
\$/student	1.73		6.56
% in relation to total expenditures	19%		71%

Current

Potential

Land required to satisfy demand

- Current F2S regional demand: 1.2 acres of farmland (7 ft²/student)
- Potential F2S regional demand: 5 acres (30 ft² /student) if fruits and vegetables that can be produced in the region were procured locally

Profitability of F2S program

Changes in Costs, Gross Revenues and Net Returns of Producing and Marketing Produce for a F2S Program versus Traditional Buyers

Commodity	Change in Costs	Change in Receipts	Change in Net Returns to Land and Management		
				\$/acre	
Apples	873	5,336	4,463		
Bell Peppers	1,454	11,768	10,315		
Blueberries	386	-2,074	-2,459		
Broccoli	1,449	11,180	9,731		
Cabbages	518	3,640	3,120		
Cantaloupe	1,356	11,340	9,984		
Cauliflower	1,111	7,048	5,937		
Cherry Tomatoes	7,277	50,383	43,106		
Cucumbers	1,355	11,423	10,069		
Green beans	349	2,515	2,166		
Bibb Lettuce	1,010	6,606	5,596		
Iceberg Lettuce	893	7,536	6,643		
Potatoes	637	4,966	4,329		
Sweet Potatoes	594	4,030	3,436		
Tomatoes	4,862	32,040	27,178		
Watermelons	301	2,084	1,783		
Yellow Squash	699	4,972	4,274		

Profitability of F2S program

- Costs of selling to schools are higher than costs of selling to traditional buyers (25% average)
- Revenues from school market are substantially higher than revenues from traditional buyers (>200% average) due to higher prices (>200% average)
- Hence: F2S programs are considerably more profitable than traditional buyers

Madison Farms Distribution System: Is it sustainable?

- Costs of selling to schools: Madison Farms charge 10% of gross revenue for marketing products (subsidized). True cost estimated at 25% of gross revenue.
- We recalculated profit calculations and F2S market is profitable even if selling charge \approx 50% gross revenue
- Since size of market is small to become self-sustainable it will need to expand to other districts and/or institutional markets

Final Remarks

- F2S market for farmers: relatively small but very profitable
- Madison Farms cooperative marketing system: good example of alternative distribution arrangement but uncertainties regarding sustainability and replicability of system remain
- Schools interested in supporting local farmers can allocate a relatively high share of total produce expenditures on local products by focusing on few categories with highest demand