ECONOMIC IMPLICATIONS OF FARM TO SCHOOL FOR A RURAL COLORADO COMMUNITY

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“We will explore the local economic impact of a specific Colorado school district’s local food purchasing program using marketing data on purchases, likely suppliers, and the assumed linkages between the community’s businesses and the new distribution enterprise.”

Increased demand and sourcing of local food by wholesale and institutional buyers is giving rise to new economic development opportunities. An increasing number of communities that lack appropriately scaled processing, aggregation, and distribution systems are exploring how to establish new local food enterprises as a way to relocalize mainstream markets in a cost-effective manner (Day-Farnsworth, et al., 2009). But given the necessary investments in infrastructure and unproven business models, should communities invest in these mid-scale supply chains?

This paper seeks to answer this question by analyzing one of the proposed benefits of mid-scale value chains: the potential positive economic impact within communities when food supply chain activities occurring within a region are increased or shifted to more locally owned and controlled enterprises. More specifically, we will explore the local economic impact of a specific Colorado school district’s local food purchasing program using marketing data on purchases, likely suppliers, and the assumed linkages between the community’s businesses and the new distribution enterprise. This analysis is not only driven by sales that are captured by a local business, but also seeks to capture the added economic activity that occurs when some economic activity (owner’s income and earned wages) are captured and re-spent in the region.

There are two main contributions of the study. One, a widely used economic model (IMPLAN) was customized to more accurately consider the direct and indirect linkages that a relocalized food marketing strategy might have within a community. This is necessary because the direct marketing agriculture sector is not well represented in IMPLAN, so customization is essential to determine a realistic economic impact on the local economy. The second contribution of the study comes from analyzing multiple scenarios, each based on different assumptions, with a comparative discussion of those results. The assumptions underlying different scenarios include how to define the local region as well as differences in gains from increased local food sourcing for both net and gross impacts. This study provides a guide for how a researcher...
might begin to customize existing models to more accurately represent direct marketing food enterprises, while at the same time recognizing that money spent on local farms and foods is not new and any model should consider countervailing effects (to account for previously spent monies now diverted from other sectors).

**An Overview of Regional Economic Modeling**

An economy is a complex system; a change in production in one industry has a direct effect, but it also has many other effects. The production of support industries will be affected, wages and number of workers will be affected, taxes will be affected, and many others aspects of the economy will all be affected. IMPLAN was designed to enable users to make an accurate assessment of how a change in one industry will affect the rest of an economy, providing a framework to help the user track the flow of money from one entity to another throughout the economy with some customization by broad economic sectors.

IMPLAN is a useful tool for researchers, but it is not without its weaknesses. Because IMPLAN estimates are based on regional and sometimes national averages, for businesses that behave differently from the average (like a small farmer involved in direct marketing), IMPLAN does not always provide accurate estimates of how these types of sectors truly behave. In order to overcome this weakness, we customized industry sectors by utilizing a combination of survey data, National Agricultural Statistics Service data, and existing IMPLAN data. Without going into great detail, it is important to note that to complete this analysis, the research team customized the employment, output, value-added, and also, shifted marketing and transportation activities to the farmer(s) instead of a middleman. These changes were made to more accurately capture the role of producers who changed their marketing strategies to support Farm to School sales in the targeted region.

Once representative sectors were created, the next step was to decide how to frame the IMPLAN geographic region in order to determine the economic impact of Farm to School. In the national discussion of localized food systems,
there is a debate on exactly what local means. “According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act (2008 Farm Act), the total distance that a product can be transported and still be considered a locally or regionally produced agricultural food product is less than 400 miles from its origin, or within the state in which it is produced.” (Martinez et al., 2010, p. iii).

Given the disjointed discussion of local and exactly what it means, we decided to study the economic impact in two different regions and provide a range of impacts that may be of interest. To get a sense of the hyper-local impact, the first region includes only two counties (where the school district is located and the neighboring county). Then, to look at a more regional impact, the second region includes the five Colorado counties with the highest dollar value of direct sales in addition to the county neighboring the school district.

**Farm to School Economic Scenarios**

Utilizing these two regions, scenarios were developed to determine outcomes based on differing assumptions. Scenario one is the most simplistic; it includes the hyper-local region with no modifications to the IMPLAN model, and assumes that all purchases made by the school district are all new demand (no money was taken away from any other sector in the region). In this scenario, only vegetable purchases of $20,900 are considered as fruit is grown outside the hyper-local region. The assumption of all new demand could be reasonable; all distributors that currently work with the school are located outside the region, mostly in Denver; and support activities for the conventional wholesale sector are also located mostly outside the region. But, it should be noted that a switch to farm-to-institution sales would represent a zero sum game for any entity that is regionally focused on the Denver and Weld communities.

Scenario two is exactly the same in terms of sales activity, but we move the impact estimates from the hyper-local region to the larger six-county region, now including fruit purchases from the West Slope, leading to a total of $39,125. Here, the assumption of all new demand is harder to rationalize. Given the larger region and possibility of wholesale activities occurring throughout the region, money being spent with fruit and vegetable farmers who sell to institutions is most likely money not being spent on other economic sectors in the region. Subsequently, scenario three attempts to more accurately model by assuming demand simply shifts from wholesalers in the region to producers in the region. The same positive shock attributed to the fruit and vegetable farming sectors is taken away from the existing activity in the wholesale sector. This result produces a net impact to the region rather than the gross impact provided in scenario two.

The fourth and final scenario is the most complex but likely the most accurate. Similar to scenario three, the fourth scenario will include the countervailing effect of demand shifting from the wholesaler to the producer (providing a net impact).
but this time the producer is a customized sector that more accurately reflects the small farmer that sells products directly. Because it draws on primary data collected in Colorado, this scenario should provide the most realistic results of all the scenarios. Figure 1 provides a visual map of these different scenarios.

Results and Discussion
As with past studies (Tuck, et al., 2010; Swenson 2006, 2010; Hughes, et al., 2009), a positive economic impact on the local community was found from increased purchasing of locally produced foods. But that impact is quite small and may or may not justify the cost (private and/or public) of the new investments necessary to build needed infrastructure, particularly when the net rather than gross impacts are analyzed (Table 1). Moreover, that positive impact is dependent on some important linkages between the new food distribution enterprise and other stakeholders (workers, owners) in the community. Since purchasing local food merely shifts purchasing from one sector to another, it is not fundamentally changing the amount of money being spent, but rather, how impactful the sectors are to their community economies.

Our model is built on one particular tenet: any increased share of the food dollar that goes to a local farmer will lead them to spend more in their community (compared to a distributor with corporate headquarters in another community). But because the direct economic impact to the community is merely the marginal difference between a purchase from a farmer and a wholesaler, that impact is going to be relatively small unless even greater linkages are created (i.e., sufficient volumes to justify new input businesses such as seed and feed stores or new processing facilities for value added activities). In short, although capturing the marketing margins of food distribution locally has great appeal to any farm or community, understanding the true benefits of relocalization requires careful deliberation and economic analysis.

Resources
“Rebuilding local food systems: marketing and economic implications for communities”
http://digitool.library.colostate.edu/webclient/DeliveryManager?pid=126976

USDA Agricultural Marketing Services
http://www.ams.usda.gov/AMSv1.0/foodhubs

Farm to School
http://www.farmtoschool.org

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