Exploratory Study on the Spatial Extent of Locally-Oriented Food Production in Maricopa and Pinal Counties

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Background

Rising Trend in Locally-Produced Food

The consumption of food produced locally is a growing trend in the United States. From the 2002 to the 2007 Agricultural Census, the number of farms participating in direct marketing rose 9%, and the value of agricultural products sold by farmers directly to consumers increased by 49% (USDA, 2009; Thilmany & Watson, 2004). *See figures 1 and 2.* In the Rocky Mountain region where Arizona lies, there was an 8% increase in the average number of farmers participating in each farmers market from 1996 to 2000, and a 74% increase in customers served over the same time period (AMS, 2000).

Figure 1.

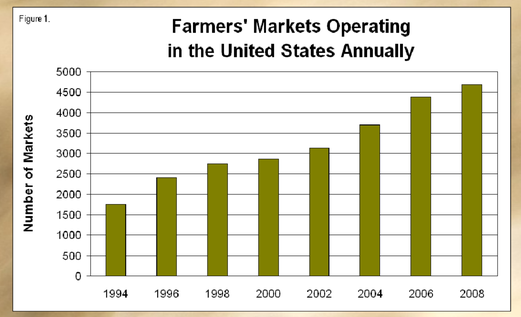
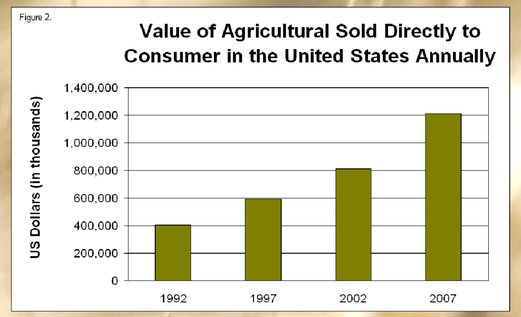


Figure 2.



Lack of Arizona Local Food Research

The local food markets in the United States and the Mountain West are expanding, but little research has been done to understand local agriculture in Arizona. Thus far, the research published on Arizona markets focuses on consumer awareness and locally grown advertising programs in Phoenix in Tucson, rather than on production of agricultural produce (Patterson et al.,1999, Martinez & Patterson, 2004). This exploratory study seeks to provide some preliminary insights as to the nature and extent of locally-oriented, food producing farms within Maricopa and Pinal counties. In this study, we define "locally-oriented" farms as those selling their products within Maricopa and Pinal counties.

Methods

1. Generated database of 55 locally-oriented food producers in Maricopa and Pinal counties using multiple online listings of Arizona farms (AFB, 2009; CFC, 2009; Local Harvest, 2009; Farm Directory, 2009; Dixon, 2008) - which accounts for 2% of the 2578 farms in Maricopa and Pinal (USDA, 2007).
2. Developed online questionnaire that focused on gathering farm, acreage, and product information.
3. Contacted farms through email or phone to request their participation in the questionnaire.
4. Visited the Downtown Phoenix, Ahwatukee, Tempe, Roadrunner, and Mesa farmers' markets in Maricopa county during September and October to make contact with producers who could not be reached.

In addition to providing information for the purposes of this study, the responses to the questionnaire are being used to generate a "local foods map" on a Google interface for use by Maricopa and Pinal county consumers - providing producers with a potential marketing opportunity as an incentive to participate.

Survey Results and Discussion

Initial responses were low, in part due to lack of accurate contact information and seasonal timing. In total, **11 surveys were returned** (9 online, 1 via mail, and 1 taken in-person), resulting in an **overall response rate of 20%**.

Average farm size of those surveyed: **31 acres**.

*In 2007 the average size for Maricopa county is **271 acres** and Pinal county is **1334 acres**.*

Year of establishment: After 2000 (**60%**), in the 1990's (**20%**), before 1990 (**20%**).

Farm ownership of the 373 acres of land of those surveyed: **74%** are leased and **17%** are owned. *See figure 3.*

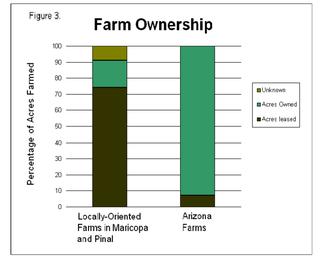
Sales methods: Regional farmers' markets (**82%**), community supported agriculture (CSA) (**36%**), restaurants, grocery and specialty stores (**27%**), online (**9%**)**.** *See figure 4.*

Products raised: **66** vegetable varietals, **19** fruit varietals, **4** animal varietals.

*In 2007 **21%** of products grown in Arizona were vegetables and **79%** of products grown in Arizona were in orchards.*

Most frequently grown items: **55%** grow tomatoes and summer squash, **45%** grow sweet or hot peppers, **45%** grow herbs.

Figure 3.



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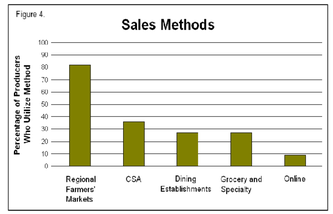
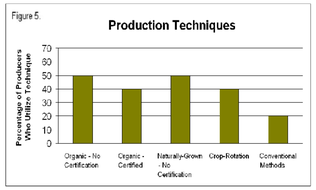


Figure 5.



Farm production techniques: Organic without certification (**50%**) and certified organic (**40%**), naturally-grown without certification (**50%**)**,** crop-rotation (**40%**), conventional methods (**20%**). *See figure 5.*

Irrigation type: Flood irrigation (**67%**), drip irrigation (**44%**), spray irrigation (**33%**).

Conclusion and Future Directions

The results indicate that a wide variety of crops are grown by locally-oriented farmers in Maricopa and Pinal counties. These tend to be young farms, and employ various environmentally conscious practices in managing their farmland. There is a strong indication that farmers markets are a popular outlet for selling products to the local market. The acreage of farms oriented towards local markets appears to be somewhat small as compared to the rest of the farmland in Central Arizona. However, due to the nature of the crops grown on these farms, a great deal can be produced on a limited acreage.

Future research should investigate the significance of local sales for food-producing farms in Maricopa and Pinal counties, in order to determine the volume of food and/or percentage of farm sales that are directed toward the local market. Additional information regarding farm production techniques and local environmental factors (temperatures, biodiversity, etc.) could provide valuable insights as to some of the additional ecosystem services that these farms can provide. A more formalized survey procedure, originating from a familiar source and timed in order to take advantage of an ideal season for approaching farmers both in and outside the farmers' market setting would be recommended as an ideal next step in this research.

The authors are currently in the process of creating an online map of local food in the Phoenix metropolitan area (Phoenix Local Food Map, 2009). It is hoped that the publication, advertising, and use of this map could help build relationships with local farmers and encourage their participation in this research.

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