Does the U.S. Farm Bill Help Farmers' Markets Feed the Poor?

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Abstract

Food justice advocates increasingly turn to farmers' markets to alleviate poor nutrition among underserved communities in the United States. In addition, farmers markets serve to create new farms and food businesses, create activity in downtowns and neighborhoods, and offer a local and distributed alternative to an increasingly concentrated and vulnerable food and grocery distribution system. The U.S. Department of Agriculture 2008 Farm Bill recognizes the importance of farmers' markets for the poor, and provides support through three programs. However, closer, cross-scale analysis finds that Farm Bill programs fail to buffer the risk and expense of market siting in low-income neighborhoods. As a result, farmers' markets rely on, and cater to, upper and middle income customers for financial sustainability. Critical components of a class- and race-sensitive market are compromised. We examine the Phoenix Metropolitan Area as a microcosm of federal funding dynamics: affluent communities have federally funded markets, while many communities in food deserts do not. To rectify the inadequacy and perverse incentives of the Farm Bill programs, we recommend changes to the budget and resource allocation programs.

Keywords

Farmers' markets; Farm Bill; food justice; low-income; Phoenix

Introduction

The last fifteen years has seen exponential growth in the number of farmers' markets in the United States. Between 1994 and 2011, an additional 5,420 markets were created, increasing the national total seven-fold (USDA 2011; see Figure 1a). This growth can be attributed, in part, to the rise of foodies, elite food aficionados, and locavores, consumers concerned about the distance between farm and plate. These privileged populations drive farmers' market profits; niche commodity goods and a romanticized farmer-to-consumer connections transform produce into a status symbol of the sophisticated consumer.

However, a parallel food justice movement calls for a democratization of the farmers' market. Organizations like the Farmers Market Coalition and the Community Food Security Coalition describe access to healthy food as a human right, citing the Universal Declaration of Human Rights, Article 25: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food”. Poverty has steadily increased through the depression at the turn of the 21st-century (see figure 1b); on average, 1 in 4 children and 1 in 7 adults are food insecure (PBS 2009; “U.S. Hunger” 2011). In particular, low-income populations face malnutrition and obesity; due in large part to USDA Farm Bill subsidies, processed grains are more accessible and affordable than fresh produce. Many food justice advocates see farmers' markets as a way to increase the availability of healthy food in low-income neighborhoods, “an important community-based strategy to address the obesity epidemic and the grocery gap in many low income areas” (Young *et al.* 2011, p. 208).

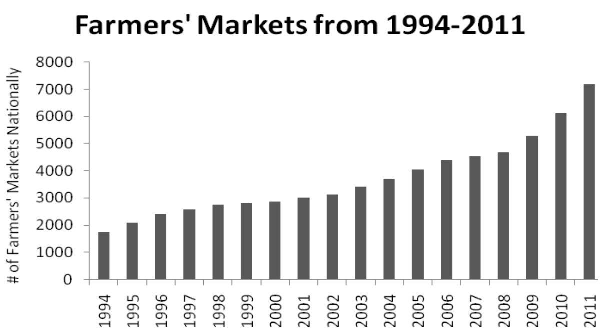

Figure 1a (left): Increase in farmers' markets nationwide (U.S. Department of Agriculture 2011).

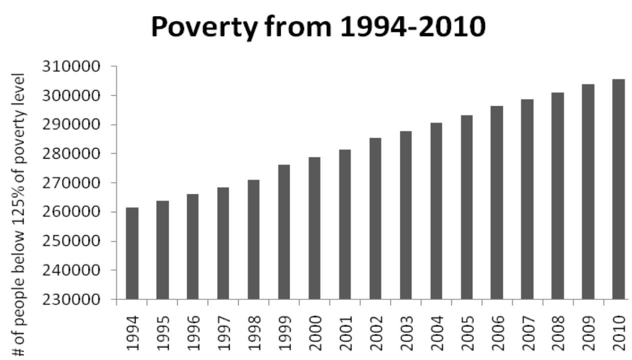

Figure 1b (right): Number of people at or below 125% of the poverty line from 1994-2011 (U.S. Census Bureau 2011).

The 2008 USDA Farm Bill pays lip service to the importance of low-income access to farmers' markets. The Farmers' Nutrition Service (FNS) funds market vouchers through the Farmers' Market Nutrition Program (FMNP) for qualifying Seniors and Women with Infants and Children (WIC). The Farmers' Market Promotion Program (FMPP) provides grants for training and infrastructure including Electronic Benefit Transfer (EBT) technology so that low-income consumers can use food stamps, or the Supplemental Nutrition Assistance Program (SNAP), at the market. Whether these programs meaningfully support low-income access to farmers' markets is the object of this research.

In order to understand the impact of direct marketing subsidies in the Farm Bill, we apply Elinor Ostrom's Institutional Analysis and Development (IAD) framework. We analyze the rigid binary between markets as places of public nutrition and private commodities, and propose an understanding of markets as bundled goods with both public and private components. Using Ostrom's classification of rules, we assess the inadequacy of Farm Bill payoff rules and find that the absence of federal rules protecting aggregation frustrates local efforts to self-organize. This cross-scale analysis examines the structure of federal resource allocation and its unintended consequences at the local scale. The USDA itself reports: “While the number of farmers markets in the United States has increased dramatically in recent years, many low-income customers, particularly in urban areas, have not benefited from this growth” (2002, p. 1). In the absence of federal funds, farmers' markets, even those run by non-profit food justice organizations, tend to cater to upper and middle-income customers. A survey of farmers' markets in the Phoenix Metropolitan Area reveals a disconnect between farmers' markets that accept USDA food stamps and USDA-identified food deserts. However well-meaning, Farm Bill subsidies for farmers' markets fall short of their goal, inadequately supporting markets cited in low-income areas. We conclude with recommendations for the 2012 Farm Bill, and suggest a more critical approach to farmers' markets as sites of food justice.

Institutional Analysis: Bundled Goods and Payoff Rules

Farmers’ markets are fundamentally different than modern super-markets (Sommer, Herrick & Sommer, 1981; Hinrichs, 2000) in the services provided to the host community and shoppers. This can be illustrated using the concept of classification of goods in Institutional Analysis theory. Goods are classified based on two criteria: difficulty of exclusion of free riders from access, and the subtractibility of use for that good. (Ostrom V & Ostrom E, 1977; Ostrom, E. 2009). In this classification system, goods are separated into 4 categories—club goods, private goods, public goods and common pool resources (Table 1).

Table 1. Classification of goods. *Source:* Adapted from Ostrom (2005), p. 24

		Subtractability of use	
		Low	High
Difficulty of excluding potential beneficiaries	Low	Toll goods	Private goods
	High	Public goods	Common-pool resource

A supermarket is a "corporate controlled, long distance based food distribution… [and] retailing system" (Sommer, Herrick & Sommer, 1981), essentially an arrangement in which the producer sells to a middleman who sells to a retailer who sells again to a consumer. Farmers markets on the other hand, are classified as direct marketing venues for farm products (Klotz, 2001). Farmers' markets and super-markets differ in the distance of the commodity chain, and in retailing versus direct marketing. However, super-markets and farmers' markets both provide "private delivery of private goods" to users (Ostrom V & Ostrom E, 1977). Both have little difficulty in excluding potential free riders: short of theft, those who cannot personally afford, or do not have state sponsored credit, do not have access to the good. When a good is consumed, as in purchased, it is removed from the market and as such is subtractable. However, the similarities between supermarkets and farmers markets are limited to their existence as a private good.

As a public good, farmers markets can be characterized as having difficulty excluding free riders with a low subtractability of use (think of national security: everyone benefits from it, one user's access does not minimize access for other users) (see Table 1). They are important as community-based strategies in addressing the obesity epidemic and grocery gap in low-income areas (Young et al., 2001). There is evidence of increased social interaction and networking between participants at farmers markets than at conventional supermarkets (Sommer, Herrick & Sommer, 1981) as well as the promise of human connections at places where production and consumption of food converge (Hinrichs , 2000). Finally, arguments have been made by the community food security coalition and the farmers' market coalition that farmers' markets "are providing a public service, and should be compensated for doing so" (Briggs et al, 2010). As such, farmers' markets provide two categories of 'goods' or are a "bundled good." This overlap of public and private goods have been traditionally seen as mutually exclusive when in fact it can be viewed as a mixed economy with substantial participation in the delivery of public services (Ostrom and Ostrom, 1977).

Extending Ostrom's argument to farmers' markets: the public goods that a farmers' market may deliver cannot be reduced to the rules of classical market economics. Neither should farmers' market be completely dominated by the state. Rather, it should be a public/private partnership between the state and community. It is in the bundling of multiple classifications of goods, both private and public, that make the farmers' market fundamentally different from the super-market.

There are two rules that enable the paradigm in which farmers markets are enmeshed: payoff rules that enable current institutions; and aggregation rules that dictate the dynamics of social interaction. The payoff rule involves the payout or receipt of something of potential value (Ostrom, 2005). From the inception to marketing and running of farmers markets, there is a complex set of rules that determine funding. These markets are on average 10% to 28% more expensive than conventional supermarkets for comparable produce (Young et al., 2011). As such, contrary to assumptions that food purchasing decisions are simply a matter of individual choice for low income families, it is matter of necessary profit margins for the farmers to enable sustainable operations (Alkon & McCullen, 2010). With the increase in the number of people slipping into poverty and joining nutritional aid programs since the 2008 recession, siting farmers markets in economically disadvantaged and food-desertified neighborhoods has become a priority for the USDA. To encourage farmers' market penetration into food-desertified neighborhoods the 2008 Farm bill appropriated funds through the USDA Agricultural Marketing Service (AMS), to create grants to help defray the cost of creating or maintaining farmers' markets in food deserts.

The logistics of creating and successfully running a farmer's market involve the coordination and cooperation of numerous stakeholders with various position rules that determine the extent of their influence in the decision making process. Included in this list of stakeholders are the community being served by the market, the group that makes up the farmers market coalition (be it a non-profit, a church, a school, or any other non-governmental organization), the city zoning board, as well as the AMS for food quality guidelines and enforcement. The aggregation rules "determine whether a decision of a single participant or of multiple participants is needed prior to an action at a node in a decision process" (Ostrom, 2005, p. 202). The aggregation rules are important when illustrating interested parties contribution, or resistance, to the farmers market placement. One such aggregation rule is the requirement that farmers' markets must accept various forms of food assistance (Young et al., 2011).

Using the IAD framework, we deconstruct this action situation around food deserts to explain the rules and other exogenous variables impacting it, the interactions between various actors, evaluative criteria employed by the USDA, as well as outcomes resulting from the interactions (figure 1).

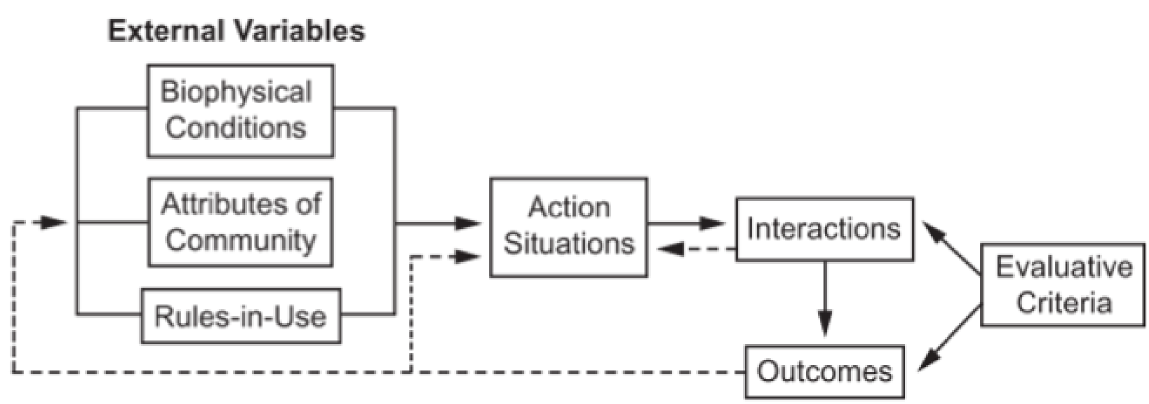

Figure 2. A Framework for Institutional Analysis, *Source*: Adapted from E. Ostrom (2005, p. 15)

Farm Bill funding for farmers' markets

The 2008 Farm Bill uses makes provisions for farmers' markets using two programs: the first, funded through the USDA Agriculture Marketing Service (AMS), increases access for low income families ; and the second targets nutrition access for families receiving food aid through the Food and Nutrition Services FNS.

The AMS is a branch of the USDA tasked with improving food and agricultural product distribution by providing standardization, grading and market news service for commodity programs, as well as overseeing research and promotion programs such as the Farmer's Market Promotion Program (FMPP).

The FMPP, created in 1976 through an amendment of the Farmer-to-Consumer Direct Marketing Act, is a competitive grant program that assists in establishing and promoting direct producer-to-consumer market opportunities such as domestic farmers markets, roadside stands, and community-supported agriculture programs (Agricultural Marketing Service, ND).

The 2008 Farm Bill for the first time made funding for FMPP mandatory at $10M annually for 2011 and 2012 in addition to the following changes:

i. No less than 10% of the funds for FMPP will be used to support the funding of Electronic Benefit Transfers (EBT) for SNAP and WIC at farmer's markets and community supported agriculture enterprises (Title X, ND).

ii. FMPP grants support all forms of direct marketing, including organizing, training, business plan development, community outreach and education and any activities designed to improve direct marketing for farmers and their target consumers.

EBT machines are "an electronic system that automates the delivery, redemption, and reconciliation of issued public assistance benefits" (Electronic Benefit Transfer Project, ND). Supermarkets are issued an EBT for free if they sell more than $1000 per month creating a critique in the farmers' market literature. These costs "are not incurred in a traditional supermarket environment. If a retailer conducts $100 or more in SNAP business per month and has a central location with electricity and a phone line, it can receive a free point of service device from the state for EBT-only transactions. However, most farmers' markets are outdoor, open-air sites that require wireless devices not currently supported by public funds. States do not provide wireless EBT machines or EBT transaction fee relief for the farmers' market environment" (Young et al., 2011). The USDA AMS evaluates the success of the FMPP program semi-annually for grants that exceed a year in length.

The second approach is nutritionally based. The USDA Food and Nutrition Service (FNS) oversees the disbursement of two nutritional programs that vulnerable populations who qualify for governmental food assistance benefits can use at farmers' markets. The FNS "provides children and low-income people access to food, a healthful diet, and nutrition education". These two institutions provide both direct and indirect subsidization for farmers' markets.

The Farmers Market Nutrition Program (FMNP) and Supplemental Nutrition Assistance Program (SNAP). FMNP issues coupons to qualified beneficiaries for redemption at farmers' markets. Limited to $30 per qualified recipient per year, evidently, these coupons are meant to only introduce participants to the market, not to serve as a major source for nutritional supplementation. However, the coupons do act as direct government subsidy for farmers' markets. The coupons target two particularly vulnerable populations, seniors, as in Seniors Farmers Market Nutrition Program (SFMNP), and mothers with infants and children, as in Women Infants Children Farmers Market Nutrition Program (WIC FMNP)

The SNAP program, unlike FMNP, does allow vulnerable populations significant purchasing power at farmers' markets. SNAP recipients may spend some or all of their benefits at a farmers' market. SNAP benefits range from $200 a month for a single occupant household to $1,202 a month for a household of eight people (SNAP, 2011). That said, there is a compelling case that SNAP recipients do not regularly use their benefits at farmers' markets with the value of SNAP benefits redeemed at farmers' markets dropping 71% in 1994 constant dollars between 1994 and 2008 (Briggs, et al., 2010)

This may be due in part to SNAP recipients who have access to a farmers' market may not be able to use their benefits at the market. "Although the percentage of farmers' markets nationwide that accept SNAP benefits has increased steadily over the past five years, just 17.7% of markets were authorized SNAP retailers in 2009" (Young 2011, p. 215). Though SNAP could offer a major source of revenue for farmers' markets, if the market does not have access to EBT, this revenue stream is lost. The payoff rules here dictate that the market has EBT, or both the market and vulnerable populations suffer. AMS and FNS have a mutually dependent strategy. AMS places EBT machines to increase economic activity by collecting benefits from FNS programs. However, FNS SNAP benefits only work if EBT machines exist at the market as seen in Figure 3.

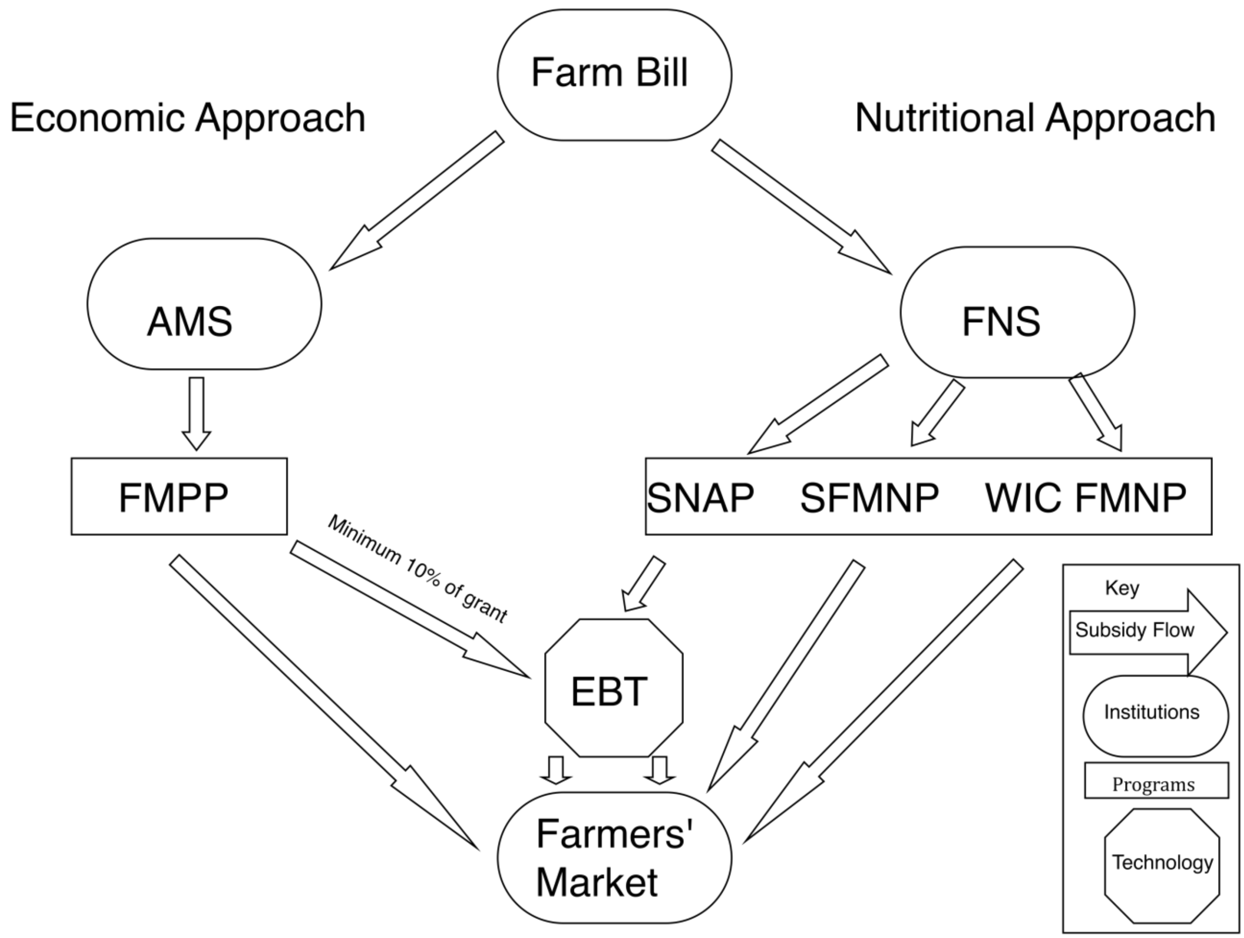

Figure 3: Flow of subsides from U.S., Farm Bill to farmers' markets.

How Federal Funds Impact Local Dynamics

A farmers' market is an inherently expensive and risky business model in a modern corporate capitalist economy. Costs include space, advertisement, administrative oversight, travel expense, and farmers' time at the market. Whereas Community Supported Agriculture (CSA) gives farmers seasonal stability through pre-sold crop shares, a farmers' market offers no such security. In a traditional supermarket, farmers can sell produce in bulk for cumulative profit; a farmers' market depends on only a small number of consumers. Moreover, traditional supermarkets, and the brand-name goods they sell, generate a comparative advantage through capital accumulation and government assistance in the form of tax exemption and subsidy. Farmers' markets face the dilemma of any local business: because the playing field is not level, local markets have: higher prices, products with some niche value, and a few very loyal customers.

Ideally, farmers' markets would specialize in fresh, local, healthy food, and obtain government subsidy to off-set the price differential between the direct and super-markets. Farm Bill programs like the Farmers' Market Nutrition Program (FMNP) and the Supplemental Nutrition Assistance Program (SNAP) attempt to fill this gap. Success of these programs depends in part on resource-intensive Electronic Benefit Transfer (EBT) technology, supported by the Farmers Market Promotion Program (FMPP). As the previous section explains, these programs do not adequately subsidize at either the consumer or producer end. In order to subsist in low-income neighborhoods, markets rely on "patronage from middle income consumers" (Fisher 1999, p. iii). Profits from sales to wealthy customers help to ensure the financial sustainability of markets, but at a cost. Efforts to attract upper-income customers produce conditions unfavorable for the food insecure communities justice-sensitive markets intended to serve.

Affordability is only one of the many factors that impact the use of farmers' markets by vulnerable populations. The success of a market in targeting low-income consumers also depends on siting, hours of operation, transportation availability, the physical environment, zoning restrictions, political support, education and outreach, cultural and linguistic sensitivity, and community buy-in. A growing body of research and anecdotal evidence document the complexity and fragility of markets serving low-income populations (e.g. Bauerlein 2011, Hunter 2005, Markowitz 2010).

Market siting strongly influences consumer demographics. Predictably, markets located outside low-income neighborhoods are unlikely to attract many low-income customers. A survey by The Food Trust in Philadelphia confirms this assumption: on average, 60% of customers live within a 2-mile radius of the market (Young *et al.* 2011). Beyond siting in a low-income neighborhood, the quality of a site depends on numerous factors in the community, physical, retail and regulatory environment (ibid).

Several anecdotes suggest markets may fare better in ethnically homogeneous neighborhoods (see Fisher 1999). Where all customers speak the same language, share the same culture, and seek the same kinds of foods, market can hire workers, stock produce, tailor outreach, and foster community appropriate for one cultural group. A successful market should weigh innumerable characteristics of the physical environment:

> “visibility of a location, potential as a gathering space, opportunities for signage, pedestrian traffic, walkability, bike access, vehicular traffic, public transportation, attractive space (shade, trees, benches, sidewalks), safety (lighting, sidewalks, traffic calming measures, sightlines), parking / setup spaces for farmers, parking for customers, nearby retail locations (other non-food retail outlets), nearby competitors, other amenities (recreation opportunities, bike racks, water fountains, restrooms, trash cans)” (Young *et al*. 2011, p. 210)

In particular, low-income consumers tend to have more constrained options for transportation. A survey conducted by a market in Los Angeles found that “20% of lower income respondents did not own a car” (Fisher 1999, p. 7). If not adjacent to a bus route, markets must be minimally walkable or bike-friendly. The nature of surrounding businesses influence the market: competition from other grocers, foot traffic from non-food businesses.

Zoning laws restrict where a market may locate. Under use-based zoning codes, a farmers' market may not establish anywhere it is not explicitly permitted (Cohen 1994). These use-based zoning policies give local decision-makers significant control on a case-by-case basis; if politicians want to shut down a market, they need only point out the absence of 'direct market' under the list of acceptable land uses. Alternative zoning policies “can be leveraged to expand access for low income community members... [by requiring] farmers' markets to accept various forms of food assistance” (Young *et al*. 2011, p. 212). Such policies are rare however.

The loophole in traditional zoning policy begins to illuminate the character of farmers' market site selection: more than a rational optimization of desired characteristics, market siting depends on numerous political and social factors. Fisher (1999) finds “in virtually all the markets studied, problems arose with City Hall, which required either political connections or the ability to mobilize grassroots constituencies to fight new policies" (p. 41). From the Ground Up (FGU), a D.C.-based market, struggled to find a community partner willing to house the market, and ultimately selected the Union Temple Baptist Church based on its "long history of community activism" and willingness to commit to the project (U.S. Department of Agriculture 2002, p. 6). The West Berkeley Ecology Center confronted NIMBYism ('not in my backyard'): all residential blocks expressed interest in the nutritional and cultural benefits of the market, but none wanted the market on their street out of concern about increased traffic (Fisher 1999). The market was ultimately sited beneath a freeway overpass, with pigeons directly over the farmers' stands. By comparison, convenient, readily available (pigeon-free) sites can look remarkably attractive. However, social and political convenience does not mean practical success, as the Alvarado Certified Farmers Market discovered. A local dentist offered to host the farmers' market in his parking lot; because the parking lot did not attract enough foot traffic, the market shut down after only 10 weeks (ibid).

Once sited, the start-up process, effort put in even before opening, can make or break a market. No single factor determines market success more than community buy-in:

> "Farmers' markets cannot be imposed from the outside... Determining what is adequate community support, or what is community-based is far from clear-cut. It raises issues such as who speaks for the community, and what are the constituencies that an organization (non-profit, school or church) represents. Just because a non-profit organization working in the community, such as a community, development corporation is interested in establishing a farmers' market does not mean that the market has community support." (Fisher 1999, p. 39-40)

Many factors influence the sense of the community. It is important to find vendors from within the community. In the Anacostia market, white farmers sold to an almost all black community; this made it "more difficult for the customers to feel that the market [was] an integral part of their neighborhood" (USDA 2002, p. 20). Education and outreach efforts should be appropriate for the nature of the community. The Pasadena Certified Farmers' Market found in-person announcements at local churches and community organizations to be a more successful method than paid advertising, fliers or banners (Fisher 1999, p. 21). Because this strategy fostered a sense of local ownership of the market, when it was later contested in City Hall for causing traffic jams, “a strong show of community support” kept the market open (ibid, p. 22).

Even when markets have a range of ethnically-appropriate produce and vendors who share the ethnicity, income-level and language of the customers, farmers' markets still have a tendency to favor affluent whiteness. McMullen (2008) observes this phenomenon at the Davis Famers Market which, like the foodie-locavore food movement in general, constructs whiteness spatially and discursively by “the clustering of white bodies around material signs of privilege, the discourse of the community-family symbolism, the racialized locations of (un)ethical consumption, the image of the 'grower', and the heroicization of farmers”, even when most are farm managers or owners bringing produce picked by day laborers and migrant workers (p. 77). Eco-moralizing messages like 'eat local', 'go green', or 'support local farmers' target an audience with enough wealth, privilege and status to make food purchasing decisions based on factors other than price. The fact that many of the affluent-white-coded discourses occur below the level of the market makes them no less relevant to the outcome or community-base of the market. Markets that depend on white middle-class consumers for subsidy will foster these tropes, while financially stable markets driven by a vision of serving low-income communities will question and re-appropriate such discourses and spatial practices. The creation of a space appropriate for marginalized or vulnerable communities requires critical analysis and constant attention.

One case in West Berkeley, California exemplifies the trajectory of an unsubsidized market sited in a low-income neighborhood. A local Ecology Center attempted to establish a market in the impoverished, racially diverse west end of town. The center's initial vision was framed as environmental justice, providing fresh produce and nutrition to underserved populations. High costs associated with the market led farmers to tailor their merchandise to “middle-class Berkeley residents” and the “yuppie 4th Street crowd” (Fisher 1999, p. 16). Prices were higher than low-income customers could afford, limited hours of operation were inappropriate for working-class schedules, and products did not include food appropriate for the Latino, Indian and East Asian communities in the area. Yuppie money “helped to subsidize the market and keep farmers returning, yet it also caused the focus to shift away from the original intention of improving food access for the low income residents of the area” (ibid). Eventually, in order to make the market more financially sustainable, abandoning the center's initial vision altogether, the market was relocated outside of West Berkeley to a location more convenient for its affluent customers.

The West Berkeley market represents one extreme on a continuum: it remained financially successful, but lost sight of its initial purpose. On the other extreme, markets that stay true to their target population and do not cater to middle or upper income customers tend to become financially unviable and dissolve quickly. The Van Nuys Certified Farmers' Market in Los Angeles, California experienced this struggle. For four years, the market's founder gathered political and community support, speaking with congress people, churches, social service agencies, homeowners and the City of Council. For a year, a local Interfaith Hunger Coalition and four Americorps volunteers raised awareness about the upcoming market. Ultimately the market stayed open only six months; “unlike other successful low income markets, the Van Nuys Market was unable to attract middle class Anglos from surrounding communities, who could have subsidized the market in its infancy” (Fisher 1999, p. 11).

Some farmers' market coalitional groups have attempted to circumvent this problem by linking profits from markets in upper income areas with deficits from markets in low-income areas. The Pasadena Certified Farmers Market is one successful example. The coalition runs on a non-profit model; proceeds from the market in the wealthier part of town are reallocated subsidize farmers in the low income market selling at lower prices (ibid). This strategy may work well for some larger, more established markets in big cities with multiple communities interested in local consumption. However, for most markets, operating independently, born of local initiative, disconnected from any broader city-wide initiatives, the cross-community subsidy strategy is challenging if not infeasible.

Since the federal Farm Bill provides inadequate support to farmers' markets, these field-to-plate enterprises rely on the business of upper-income customers. However, because wealthy, often white, consumers have different interests than the low-income shoppers, farmers' markets face a catch-22: cater to the rich and lose the social values that initially inspired the market, or focus on serving the poor and generate insufficient funds to operate.

Farmers Markets in Maricopa County

Maricopa County is the largest county in Arizona and includes the city of Phoenix, the capitol of Arizona. There are 30 cities or Census Designated Places (CDP) that make up Maricopa county with a total population of over 3.8 million and 15% of that population living below poverty level (U.S. census Data 2010).

The USDA's Food and Nutrition Service (FNS) through the Supplemental Nutrition Assistance Program (SNAP) (formerly known as the Food Stamp program) provides government assistance to 11% of Maricopa residents, concentrated in the Phoenix-Mesa metro area (SNAP Access, 2011). SNAP benefits can only be accessed at locations with Electronic Benefit Transfers (EBT) terminals such as supermarkets and large chain grocery stores. Based on the access to these large supermarkets and grocery stores, significant portions of Maricopa County have been designated as food deserts. The USDA defines a food desert as low income community (with a poverty rate at least 20% or greater, or median family income below 80% of the census tract area median family income) with low access to supermarkets or large grocery stores (at least 500 people and /or at least 33% of the census tract population residing over 1 mile (10 miles in rural areas) from a supermarket or large grocery store). Note that this definition infers that communities in close proximity to large unused tracts of land such as parks or golf courses are designated as food deserts.

Farmer's markets are considered direct marketing outlets by the USDA Agricultural Marketing Service (AMS) and as such would be viable sources of nutrition. Of the thirteen farmers markets in operation in Maricopa County, there are currently eight with EBT terminals: 2 in Phoenix, 3 in Scottsdale, 1 in Tempe, 1 in Ahwatukee, and 1 in Mesa all located in middle to high income neighborhoods (see figure 2).

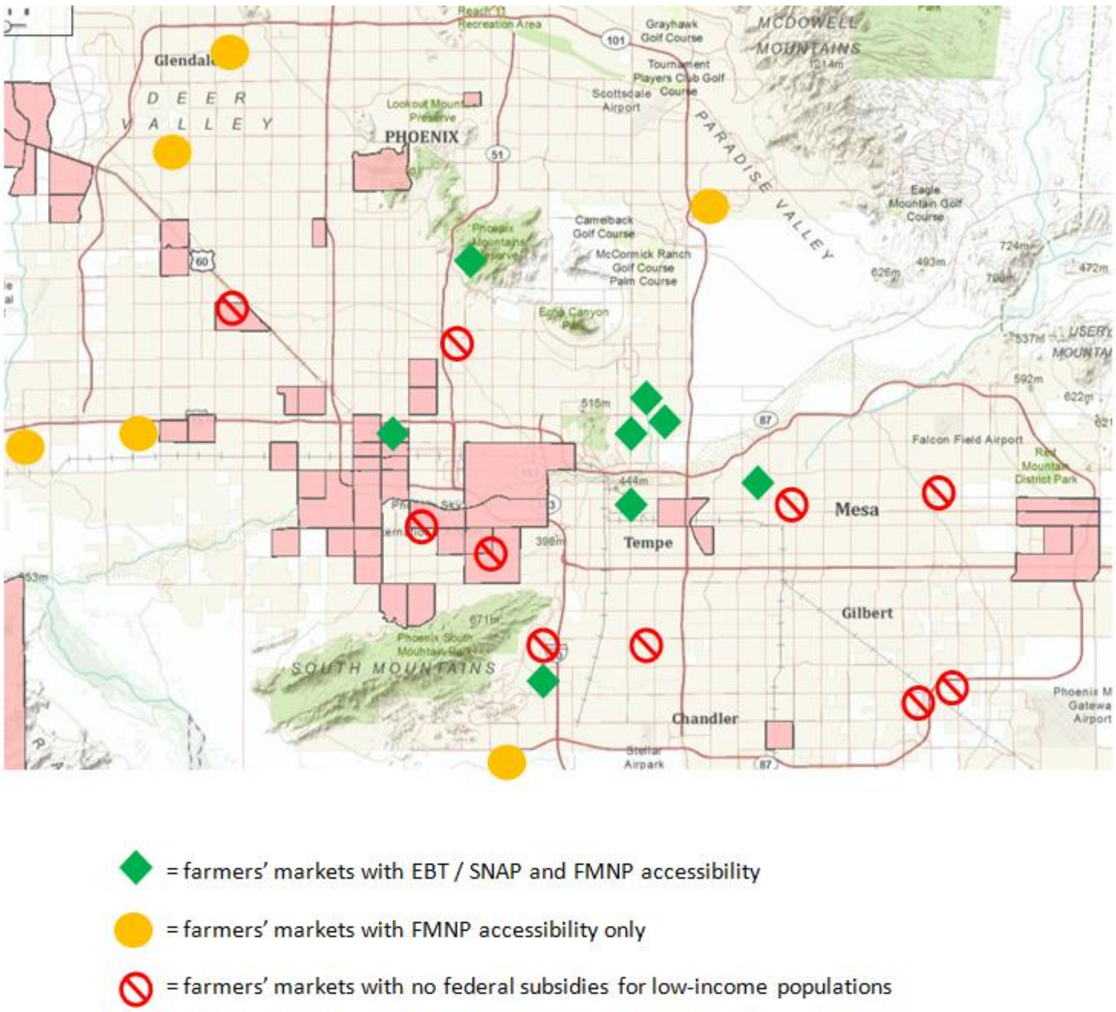

Figure 2. Farmers markets and food deserts in the Phoenix Metropolitan Area. Pink shaded areas are USDA-defined food deserts. Green diamonds have both EBT/ SNAP and FMNP accessibility. Orange circles have FMNP accessibility only, while red null signs offer no federal subsidies for low-income populations. Note, there is only one EBT and FMNP accessible market in a food desert.
The action arena at county level is further deconstructed using the IAD framework.

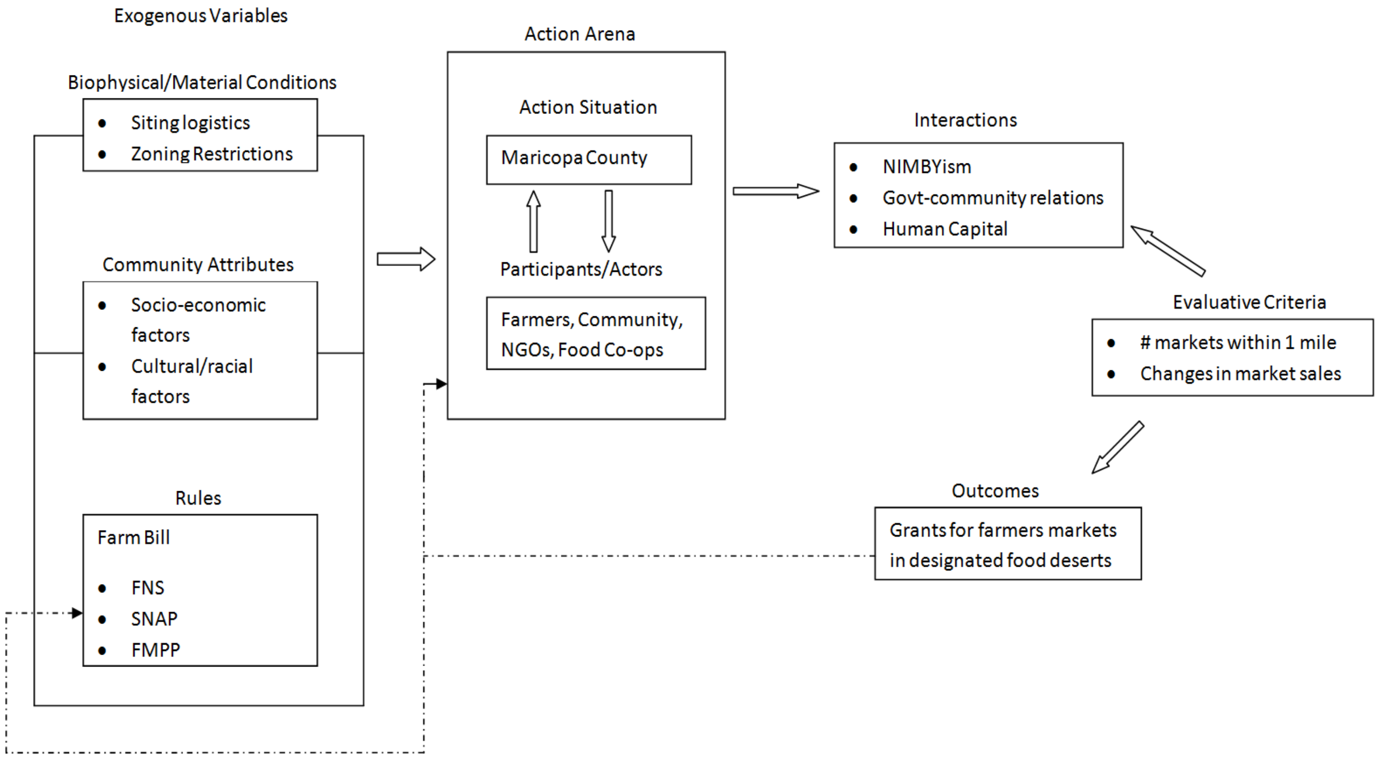

Figure 4. Food Deserts in Maricopa County deconstructed using the IAD framework.

Exogenous Factors

Biophysical/Material Conditions

Studies show that the single most significant determinant of customer participation in a farmers market is trip-making behavior, with the appropriate walking distance tagged at three-quarters of a mile (Tong et al., 2011). In Maricopa County, except for the farmer's market located on Central Avenue in Phoenix, almost all other markets are located at an average distance of four miles from a designated food desert. For markets with EBT access it is more than twice that.

The logistics of zoning require that the public space to be used must have external power access as well as appropriate transit access (close to major thoroughfares, public transit routes, as well as parking). The fact that most of the food deserts in the county are located close to large tracts of land infer that that zoning is a hurdle that can be easily overcome by siting in public establishments such as the myriad libraries located in these areas.

Community Attributes

The communities located around food desert tracts are predominantly Hispanic lower class (U.S. Census data, 2010). Even when located in racially diverse communities, the population at farmers markets is disproportionally white and explains lack of participation in terms of class, positing that class restrictions are synonymous with racial restrictions (Alkon et al, 2011). One would be hard pressed to see a Latino, who does a significant portion of the farm work, behind the stands at most of the farmers markets in Maricopa County. Because of this racialized and classed division of labor in agricultural production, white and class privilege is reproduced and programs in alternative agriculture concentrate on giving aid first and foremost to white farm owners (Alkon, 2011). In addition, making a fair profit from sales at low income markets is problematic for the farmers who end up migrating to higher income communities (Fisher, 1999).

Interactions

Monthly cash flows in low income communities have been found to vary substantially, with food purchases often declining towards the end of the month (Young, 2011). The fluctuation of cash flow towards food purchases undermines the success of farmers markets in low-income neighborhoods. Additionally, since farmers markets cannot be imposed form the outside, defining adequate community support is problematic, raising issues such as who the representative voice for a community is, and what constituencies any such organization (non-profit, church, or school) supports. The presence of a farmers market run by an organization in a community does not infer that the market has community support.

The ability of a community to organize and run its own farmers market requires political connections and ability to navigate City Hall. Most low income families communities lack the human or social capital required to garner such political force, or so self –organize because much of their time is spent working

According to the Arizona Farm Bureau (AZFB), farmers markets are started and run by community members in alliance with local farmers, hence the social capital within the community must be strong enough for a farmers market to be successful. If there is no community buy-in, issues such as lack of culturally appropriate foods, and racial and cultural representation of the community within the market, would invariably lead to poor performance.

Evaluative Criteria

The USDA AMS evaluates the success of the FMPP program semi-annually for grants that exceed a year in length. Evaluation is both quantitative and qualitative based on the following indicators:

Quantitative indicators

- Changes in farmer/rancher income;
- Changes in market sales;
- Number of jobs created;
- Changes in the number of farmers/ranchers who sell their products at a specific farmers market.

Qualitative Indicators

- Types of needs in the community;
- Strategies used to address those needs and effectiveness of strategies;
- Description of project results;
- Description of beneficiaries
- Lessons learned and other deliverables (publications, photographs, and other media).

From the qualitative evaluative criteria, it is obvious that the AMS views farmers markets, not just as nutrition sourcing point, but also as an avenue for building community and creating a sense of place. It will be important to determine what findings from the 2009 evaluation of FMPP-funded farmers markets led to an increase in EBT equipped farmers markets from one in 2010 to eight in 2011.

Conclusion and Recommendations

Many food justice organizations contend that farmers' markets should serve a public good, filling the grocery gap in low-income food deserts. In this article, we analyze the success of the USDA Farm Bill in implementing this ideal. Certainly federal funding has been critical to the growth of farmers' markets in low-income areas. In particular, the Farmers Market Nutrition Program (FMNP) vouchers have given farmers a “more steady stream of income” that assuages some of the risk of direct marketing (“How the Farm Bill” 2006, para 3).

However, FMNP vouchers, at $30 per person per year, are far too small to significantly impact nutrition. Their utility relies on the assumption that low-income customers will be lured to the market by the vouchers, after which they will spend Supplemental Nutrition Assistance Program (SNAP) money on the fresh produce. This assumption is false for at least two reasons. For one, studies find that the majority of customers who receive vouchers do not return, either due to lack of interest or unawareness about the possibility of using SNAP funds. Further, only 17% of markets in the U.S. have the Electronic Benefit Transfer (EBT) technology that allows a customer to swipe their SNAP card. The Farm Bill Farmers' Market Promotion Program (FMPP) attempts to address this gap through a grant, for which markets sited in low-income areas are eligible, that provides funds for capacity-building, training and EBT technology. These programs are underfunded and under-analyzed; because they are interdependent, they need robust linkages that holistically impact low-income nutrition.

The inadequacy of these Farm Bill programs lead farmers and market managers to cater to upper and middle-income consumers. For the sake of financial sustainability, markets adapt critical components of their organizing strategy to the needs of upper income customers. Optimal site selection requires consideration of a vast range of physical, social and regulatory factors, all of which can be undone by political interests and convenience. Community ownership of the market matters more than any other factor and is the most difficult to foster. Even markets that advertise extensively, generate support over months or years before opening, and have culturally appropriate products and staff, may still fail to inspire low-income minority groups because the agri-food movement is dominated by affluent, white spaces and discourses. These challenges are amplified when markets lack the fiscal resources to target the particular needs and interests of low-income customers. The justice-oriented market faces a dilemma: address the needs of low-income consumers and risk losing the subsidy of upper income customers, or tailor the market to upper income customers and fail to impact low-income nutrition.

This disconnect between capacity and social need appears at the county level. In the Phoenix Metropolitan Area, we found that seven of the county's 32 markets have the EBT technology needed to accept SNAP, and only one of those EBT-equipped markets is located in a food desert. This is logical since upper income areas are more likely to have the resources and infrastructure to install and use the technology. Areas that most need SNAP accessibility are least able to achieve it.

To resolve these paradoxes at local and regional scales, we recommend changes to federal funding. The first obvious line of reform is the Farmers' Market Nutrition Program vouchers. Numerous studies have confirmed the intuitive: $30 per year is not enough to meaningful improve an individual's nutrition. Because vouchers do not act as lures as imagined, they should be substantially increased. FMNP should also not be so heavily dependent on state support. Fisher (1999) recommends cutting the percentage of required state commitment from 30 to 15%. Removing state participation altogether might also be desirable if the FMNP were somehow stripped of the paperwork and bureaucratic processes currently associated with the $30 voucher.

Since EBT technology poses an irresolvable barrier to the use of SNAP benefits at the market, the Farm Bill should prioritize the installation of this equipment in low-income neighborhoods. Whereas farmers’ markets must currently apply for EBT funding, we propose the Farm Bill remove the granting process. In the same way that grocery stores automatically receive EBT technology if they conduct $1000 or more in SNAP business per month, we recommend farmers' markets with some proven indicators of success (longevity, sales, etc.) should automatically receive EBT without have to seek out resources and skills to apply for assistance.

EBT availability is not the only missing link between FMNP vouchers and SNAP benefits. Lack of awareness also prevents seniors and women with infants and children from returning to the market to use their SNAP cards. It seems a better avenue for state participation in the FMNP would be to require state outreach on SNAP use at farmers' markets.

Finally, more research is needed on conditions conducive to farmers' market success in food deserts. The Farm Bill Sustainable Agriculture Research Enterprise (SARE) would be a good place to site such research. As our literature review of local market dynamics underscores, the success of markets in low-income neighborhoods varies widely depending on a number of complex processes occurring at all stages in the development process, operating spatially, politically and discursively. Although these components do not fit nicely in a cost-benefit analysis, anecdotal evidence suggests that a market's presentation of race and class significantly influence its ability to serve the marginalized.

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