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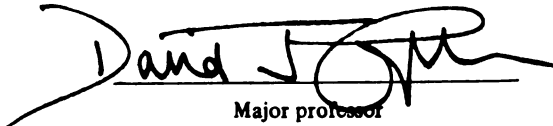
CLOSING THE DISTANCE GAP THROUGH
COMMUNITY SUPPORTED AGRICULTURE

presented by

Jamie Ann Picardy

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of the requirements for

M.S. degree in Geography


Major professor

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**CLOSING THE DISTANCE GAP
THROUGH COMMUNITY SUPPORTED AGRICULTURE**

By

Jamie Ann Picardy

AN ABSTRACT OF A THESIS

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ABSTRACT

CLOSING THE DISTANCE GAP THROUGH COMMUNITY SUPPORTED AGRICULTURE

By

Jamie Ann Picardy

Community Supported Agriculture (CSA) has the potential for ‘closing the distance gap’. CSA farms are local organizations of food producers and consumers in which direct relationships reduce physical and social distances. Although the overall distance from field to family decreases through CSA, the travelling distance to obtain food increases for consumers. For this reason, the primary question to be addressed within this thesis is whether CSA can bring consumers closer to producers in spite of various inconveniences felt by CSA participants. The concept of distance decay is used to develop hypotheses regarding the effect of distance. The research questions and hypotheses are applied to one CSA farm in western Michigan. Surveys and phone interviews of CSA members and farmers are used to understand the reasons for joining, for participating, and for leaving CSA.

Findings indicate distance to be strongly related to the level of active participation as well as consumer retention. Within this study, a distance of 25 miles is found to represent the maximum distance for consumers to travel to CSA farms. Overall, results indicate that CSA *in practice* reduces the physical and social distance between growers and consumers, thus reaching the *conceptual potential* of ‘closing the distance gap’.

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CHAPTER 1: THESIS OVERVIEW

This thesis examines Community Supported Agriculture (CSA) in a locational context. CSA is a growing social and environmental movement. Socially, CSA is based on the cooperation of farmers and farm members. Together they share the joys, hardships, and responsibilities of growing food. Environmentally, CSA demands ecologically sound, organic farming. Through organic agriculture, biodiversity is increased and foreign inputs are decreased, while adapting to the needs of the soil, plants, animals, landscape, and consumers. Hence CSA appreciates the uniqueness of 'place' or landscape.

CSA developed out of a discontent with industrial agriculture and the urbanization of rural land. The basis of this alternative movement is the direct connection and conscious commitment between farmers and consumers. For this reason, CSA is altogether different from the conventional food system. For example, dissimilarities include: short verses long transportation distances, profits for farmer verses for middle operations, small verses large scale, organic practices verses energy and chemical intensive methods, local knowledge verses standardized production techniques, biodiversity verses mono-culture, and self reliance verses corporate dependence. These comparisons between CSA and conventional agriculture are further expanded in Chapter 2.

The possibilities of CSA then rest in these differences. Previous CSA literature demonstrates that the attitudes of CSA shareholders reflect the founding CSA principles, which allow CSA to be conceptually and functionally different from conventional

agriculture. Past CSA studies examined members' reasons for joining, their levels of involvement, and the (dis) advantages for shareholders. The impact of distance on CSA has not yet been studied. Thus, the main focus of this research is to determine whether CSA brings consumers closer to producers despite inconveniences that develop out of the direct relationship. The questions that emerge from my research focus include:

- Does CSA *in practice* reach its *conceptual potential* of 'closing the distance gap'?
- How far is too far for active CSA membership?
- Can physical separation distance be correlated to the reasons for joining, for participating, and for leaving CSA?

These questions, along with corresponding hypotheses, make up Chapter 4.

To begin to understand the distance factor within CSA, I chose to closely study one farm over the course of the 2000-growing season. In addition, I broadly surveyed CSA farmers across Michigan, Indiana, and Ohio. A description of the case study and methodology is presented in Chapter 5. The results are shown and discussed in Chapter 6. A summary of my findings, accompanied by final questions and conclusions regarding the future role of CSA, is addressed in Chapter 7.

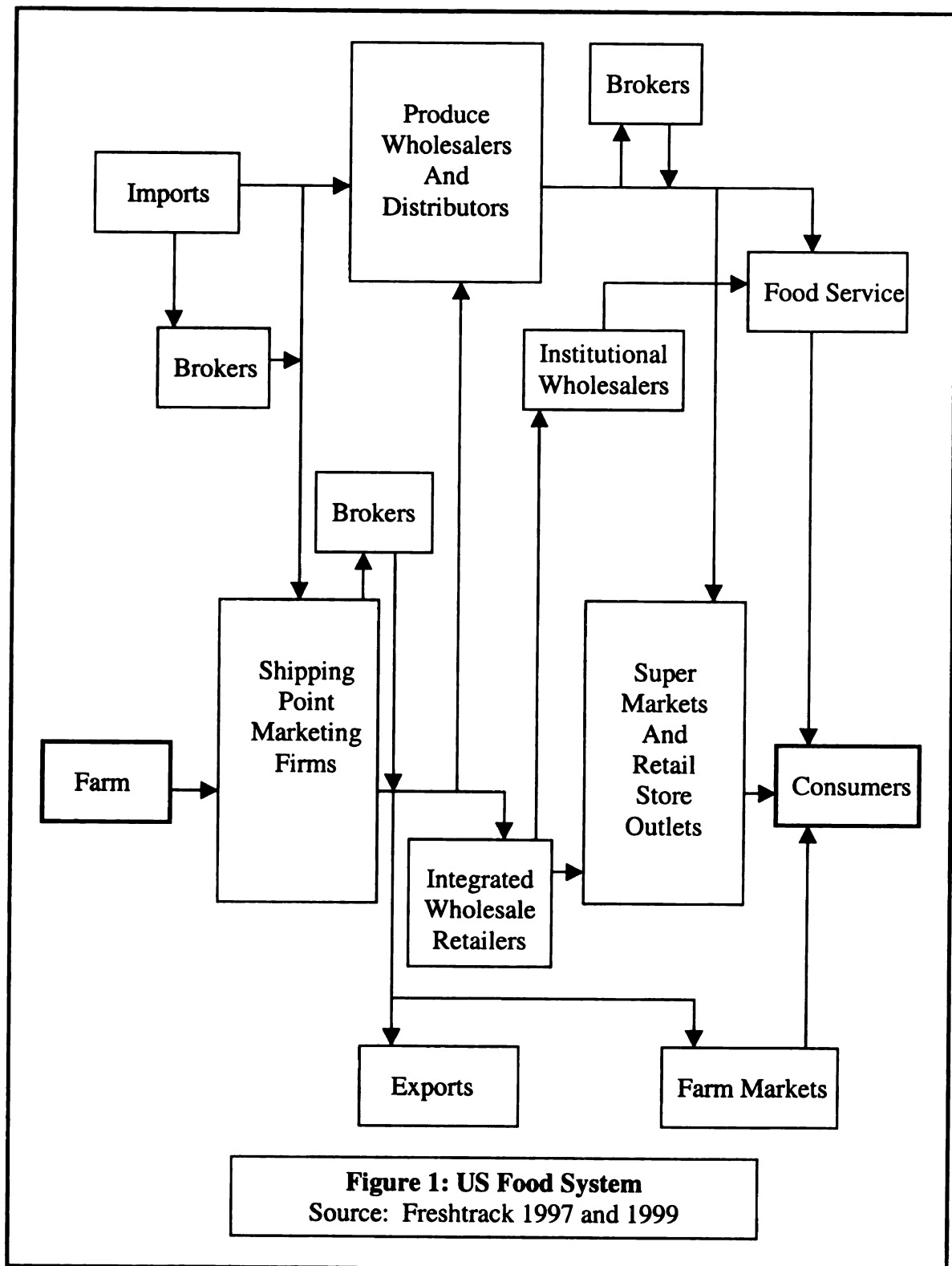
CHAPTER 2: INTRODUCTION TO FRESH FOOD SYSTEMS

The purpose of this chapter is to identify key characteristics of the conventional food system that are seen by proponents of CSA as foci for alternative practices. The objective of this chapter is not to provide a comprehensive evaluation of the conventional food system, but rather to establish selected criteria against which the potential success of CSA may be evaluated.

Conventional Food System in the United States

Our fresh food system has undergone many changes in the past 50 years. These changes are visible at all levels of the production system. At one end, farms of today are larger, highly specialized, less diversified, and more dependent on mechanization and chemical inputs than those of yesterday. There has also been a “steady progression in most food commodities from independent production to a highly [vertically] integrated system characterized by either contract or corporate production” (Heffernan/Constance 1994, p.34). On the other end of the food system, retail grocery stores now carry domestics (like apples or potatoes) and exotics (like mango or star fruit) year-round, which is quite different from the local, seasonal availability of few decades ago.

The following diagram (Figure 1) shows the flow of fresh fruit and vegetables in the United States during the 1990s. As we can see, the fruit and vegetable producers are on the far left and the fruit and vegetable consumers are on the opposite right side. In between the producers and consumers are on average 1,300 miles and about six exchanges (Kloppenburg et al. 1996, p.34 and Hendrickson/Ostrom 1996, p.iii). The



present produce system has been made largely possible through the establishment of extensive refrigeration networks, called cool chains (Friedland 1994). In addition to refrigeration, long-distance transportation has been economically viable due to cheap, non-renewable fossil fuel energy (Paxton 1994).

There are many environmental, economical, and social consequences that stem from the complexity of our food system. The following sections review the various negative externalities associated with the conventional production and distribution of food. I begin with the environmental effects, then proceed to the economic consequences, and conclude with the social costs of the US modern food system.

Environmental Effects

Trucks, trains, barges and planes transport the majority of our large food shipments. Transportation consumes nearly 20% of the total petroleum used in the food and fiber system (Herrin/Gussow 1989, p.274). Of these four modes, trucks transport the vast majority (95.4%) of our produce (Morris 2001). The average fully loaded truck weighs 40 tons, causing as much individual highway damage as 9,600 cars (Cornucopia Project 1981, p.129). As for environmental comparisons, the following table lists energy use for these transportation methods. Table 1 is arranged in order of energy efficiency, with barges and trains being more efficient. Using the tabulated values provided by Paxton (1994), road transportation uses four times more energy than rail. Another study makes a similar comparison and finds that trains use less than one-third the fuel energy than trucks (Cornucopia project 1981, p.129).

Transportation not only uses non-renewable energy, but also contributes to air pollution. Comparing rail and road emissions, we see that trains emit less carbon

Table 1: Energy and Pollutant Comparisons
(Source: Paxton 1994 with US unit conversions)

	Barges		Trains	
	KJ/Tonne/km	KJ/ton/mi	KJ/Tonne/km	KJ/ton/mi
Energy Consumption	423	692	677	1,107
Specific Total Emissions	[g/Tonne/km]	[lb/ton/mi]	[g/Tonne/km]	[lb/ton/mi]
Carbon Dioxide	30	0.1081	41	0.1478
Volatile Organic Compounds	0.1	0.0004	0.08	0.0003
Nitrogen Oxides	0.4	0.0014	0.2	0.0007
Carbon Monoxide	0.12	0.0004	0.05	0.0002
Hydrocarbons	0.04	0.0001	0.06	0.0002

	Trucks		Airplanes	
	KJ/Tonne/km	KJ/ton/mi	KJ/Tonne/km	KJ/ton/mi
Energy Consumption	2,890	4,725	15,839	25,898
Specific Total Emissions	[g/Tonne/km]	[lb/ton/mi]	[g/Tonne/km]	[lb/ton/mi]
Carbon Dioxide	207	0.7462	1206	4.3474
Volatile Organic Compounds	1.1	0.004	3	0.0108
Nitrogen Oxides	3.6	0.013	5.5	0.0198
Carbon Monoxide	2.4	0.0087	1.4	0.005
Hydrocarbons	0.3	0.0011	2	0.0072

dioxide, volatile organic compounds, nitrous oxides, carbon monoxide, and hydrocarbons than trucks. Thus, the majority of our fruits and vegetables travels by trucks, rather than by train and barge alternatives that are more fuel-efficient, produce less air pollution, and reduce infrastructure stress.

In addition to fossil fuel combustion from transportation, the current US fruit and vegetable system incurs packaging waste. By the time the produce reaches the consumer's home, it has been packed and repacked several times. For instance, retailers, wholesalers, and growers/shippers have only a small percentage of their packaging as reusable (28%, 14%, and 13% respectively) (Freshtrack 1997, p.43, 71, 100). Furthermore, 10% of the food dollar is for the cost of packaging (Orion 2000).

Economical Effects

The extensive US food system also has economic costs. In 1992, US farmers produced \$15.6 billion worth of fruit and vegetables on 151,000 farms (Freshtrack 1997, p.6). During that same year, consumers spent \$85 to 100 billion on produce (Freshtrack 1997, p.2). There is obviously a large difference between the values created by producers and realized by consumers (more than 70 billion dollars). Where does this money go? It goes to the middle operations, such as produce packers, field buyers, distributors, brokers, wholesalers, and transporters. Another study found a similar disparity: 75 cents of every consumer dollar spent on food goes to the processors, packagers, shippers, advertisers, and retailers, while the producers receive only one-fourth of the market value (Kloppenburger et al. 1996, p.35). Other statistics are even more bleak for US farmers, demonstrating they receive less than 10% of the consumer's food dollar (Orion 2000).

Another hidden economic cost of the large food system is the loss of produce that is damaged or rejected from transport and handling. Food companies and consumers have become accustomed to “perfect” food, despite the tremendous amounts of pesticides, fertilizers, and specialized machinery required for the mass production of cosmetically-beautiful and size-correct fruits and vegetables. Because not all produce meets these physical standards, the result is a considerable amount of “waste”. Overall about one-fourth of all fruits and vegetables harvested at US farms never make it to the customers (Orion 2000 and Klausner 1996, p.2). Produce waste is found throughout our food system: 18% within food service, 9% at the wholesaler, and 11% for the retailer (Freshtrack 1997, p.114).

Social Effects

The current US food system also has social effects, which are more difficult to quantify than the above environmental or economic consequences. The physical distance between grower and consumer creates social distance. This social distance is represented as a loss of knowledge of *who grows our food and where/how our food is produced, processed, and transported* (Paxton 1994 and Kloppenburg et al. 1996). Glenn McGee asks the question ‘is it a conspiracy [of industrial agriculture] to deprive us of the knowledge we want?’ (McGee 1993, p.168). If we asked the typical supermarket shopper ‘where did your apples or beans or potatoes come from?’ she or he would probably answer ‘the store’. Wendell Berry has stated that we consider ourselves as consumers, not as participants in agriculture. We as consumers then play a passive, dependent role in our food system. Berry further states:

“Most urban shoppers would tell you that food is produced on farms. But most of them do not know on what farms, or what kind of farms, or where the farms are, or what knowledge and skills are involved in farming. For them, then, food is pretty much an abstract idea – something they do not know or imagine – until it appears on the grocery shelf or on the table” (Bonanno 1993, p.164).

Thus, “distance from food and food [itself] is a conditional and abstract idea”, which detaches us from our actions, beliefs, the land, biological reality, and the world (McGee 1993, p.165).

In addition to the loss of knowledge, consumers also lose the nutritional content of produce during transport and storage. For example, produce such as asparagus, green beans, and spinach lose half of their vitamin C content within 24 hours of being harvested and stored at room temperature (Paxton 1994). As Brewster Kneen says, “anything picked fresh and virtually still alive when eaten is going to be of different nutritive value than something that has been dead or dying for days, refrigerated, and/or gassed into or out of a coma before it gets to you” (Kneen, 1993, p.47).

At the farm level, there are social and environmental effects associated with specialized, intensive, large-scale, vertically integrated food systems. These include biodiversity loss, agrochemical pollution, health risks, and vulnerability issues. For example, producers grow standardized hybrids in order to meet the requirements of appearance, uniformity, and transportation/storage, thereby reducing crop biodiversity (Paxton 1994). Second, there has been increased use of chemical fertilizers to attain higher yields along with pesticides to protect against pests and diseases that are problematic, especially for monocultures (Norberg-Hodge 2000, Crouch 1993/94, and Paxton 1994). Agrochemicals have several associated negative externalities, such as soil and water pollution and health issues for the farm labors and food consumers (Norberg-

Hodge 2000 and Paxton 1994). Third, cash crop exports take precedence over local needs or self-sufficiency with regard to resource allocation (Bonanno 1994, Paxton 1994, and Crouch 1993/94). Fourth, local knowledge of what to grow and how to grow it has been replaced by standardized agricultural techniques (Kloppenburger et al. 1996).

These negative consequences of modern, large-scale agriculture to society can be summarized by the Rodale Press¹, which states:

“Among these diseases [afflicting the whole food system] are the enormous erosion of the country’s vital topsoils, the loss of farmland to development, our almost total dependence on a depleting fuel supply that is escalating in price and over which we have little control, our similar dependence on a depleting mineral base, our overuse of dangerous pesticides and soil-damaging synthetic fertilizer, our non-sustainable use of water, the equally non-sustainable environmental impacts our food system is having, the threats to human health of our current diet, and our self-defeating patterns of domestic food assistance and participation in the global food system” (Cornucopia Project 1981, p.13).

The reviewed externalities (environmental, economic, and social) reflect the complex and tenuous connections between growers and consumers. By examining our current produce system, we can begin to construct an alternative method for growing food that is more ecologically and socially sustainable. The succeeding section introduces one possible alternative, which reduces and/or eliminates many of the negative externalities stemming from the conventional food system.

Promises of an Alternative Food System

As stated above, our conventional food system is complicated and keeps producers and consumers disconnected from one another and from an understanding of the food system as a whole. We therefore need to find ways to cut physical and social

¹ Although the Rodale Press made this statement 20 years ago, its content continues to apply today (2001).

distances and reconnect growers with consumers. The logical place to begin would then be at the 'local' rather than 'national' or 'global' (Herrin/Gussow 1989).

Bioregions and foodsheds are useful frameworks for 'localizing' the food system. Bioregionalism heightens awareness of place (including the understanding of ecological realities and cultural traditions) in order to implement appropriate and respectful human interaction (Bernard 1997 and Kloppenburg et al. 1996). Similarly, foodsheds are geographical areas defined by the supply structure, ecological productivity, and social/cultural elements of a community (Getz 1991 and Feenstra 1997). Using these two concepts, a food system can be "rooted in a particular place" and hence restructure how farmers grow and consumers buy produce (Feenstra 1997, p.28). Although local food systems would not have fixed boundaries, they would be developed in geographical-social space defined by soil properties, microclimatology, rainfall, biological communities, ethnic and cultural traditions, and culinary preferences (Kloppenburg et al. 1996). As a result, local food systems would use a more holistic approach for producing food to meet the communities' (biological and human) needs and conditions.

One model for creating local food systems is Community Supported Agriculture (CSA). CSA is an organization of food producers and consumers (described as shareholders or members) who share the responsibilities, risks, and rewards of farming (Groh/McFadden 1997 and Cone/Myhre 2000). "With food as a focal point, CSA brings a growing circle of people into a closer relationship with place" (Wells et al. 1999, p.38).

The concept of CSA began in Japan, Switzerland, and Germany in the 1960s. During this time, farmers, parents, and neighbors organized cooperatives in response to concerns over food safety and the urbanization of agricultural land. The first CSAs in the

United States were established in the mid-1980s by Jan VanderTuin, Robyn VanEn and John Root in Massachusetts and Traugher Groh in New Hampshire (Hendrickson/Ostrom 1996). Now, 15 years later, there are more than 1,000 CSA farms across the US with concentrations in the Northeast, the West Coast, and the cities of Madison, Wisconsin and Minneapolis, Minnesota (McFadden 1999, p.7 and Hendrickson/Ostrom 1996, p.4).

CSA is a direct marketing approach in which members purchase a farm share before the growing season. The share payments go directly to the farmers, not to the middle operators. In return, CSA members receive a portion of the weekly harvest (also called a “share”), which is minimally processed and packaged. CSA farms are generally small scale (less than 50 acres) and grow a wide variety of crops. In addition, members live relatively close to the farm (less than 60 miles) thereby reducing the distance between growers and consumers. Many CSAs have a core group of members who voluntarily work with the farmers to organize and manage distribution sites, plan what to grow, and how to recruit new members (Hendrickson/Ostrom 1996). Organizationally, CSAs are as diverse as the crops grown. For instance, the creation of a CSA may be initiated by farmers, and/or members, and/or institutions. The farmland may be owned by the farmers or members or it may be rented. There may be less than 10 or greater than 200 shareholders. The weekly distribution of produce may be picked up at the farm or may be delivered to neighborhood sites. Finally, there are various types of shares, such as non-work, work, or trade shares. Non-working shares are the most expensive since they usually do not have a work requirement of the members. On the other hand, farm work, services, or materials supplement work and trade shares.

In conceptual terms, CSA has many benefits (DeLind 2000). For example, the CSA farmers have a preseason income provided by the shareholders that can be used to purchase seeds and equipment. CSA grants a familiar, more secure market for the farmer through (1) sharing the production risk from drought, floods, or pests and (2) connecting directly with local consumers. CSA also utilizes farmers' direct experience and knowledge of 'place'.

The benefits for the CSA members include: (1) access to fresh, whole food that is typically harvested the day of or day before distribution; (2) introduction to new foods or varieties that may not be offered in conventional grocery stores or that may be too expensive to try; (3) education such as knowing who grows the food and how it is produced, opportunities such as preparation, canning, freezing, and cooking classes, learning to eat in season, and sharing recipes; (4) active role as a participant, not an observer, in the food system; and (5) community building and connecting with the grower, the land, and other CSA members.

For the community at large, CSAs provide an arena for local decision making about how and what types of food are grown, processed, packaged, and delivered. CSAs also improve biological diversity and environmental quality through the use of polycropping with organic practices.

In summary, the model of CSA is able to reconnect growers and consumers and potentially reduce the negative externalities with our conventional US food system. These external costs to society are based on the physical and social separation of farmers with consumers. They include energy requirements and air pollution from transportation, packaging and produce waste, revenue disparity, and loss of knowledge and nutrients.

Table 2 below compares, in relative terms, the main differences between the two types of food production systems and identifies key criteria for evaluating the potential success of CSA.

Table 2: Comparison of Food Systems	
<u>Conventional US Food System</u>	<u>CSA Model</u>
Long transportation distance	Short transportation distance
Packaging waste and loss from damaged or rejected food	No or reduced packaging - food "waste" is recycled back onto land as compost or donated to food bank
Majority of profits for middle, not farmer	Majority of profits for farmer
Lack of consumer knowledge	Consumer part of growing process, from start to end
Large-scale production methods: specialized hybrids, energy and chemical intensive, and mechanized	Small-scale production methods: inter-cropping, organic/biodynamic practices, and land stewardship
Standardized agricultural techniques developed from elsewhere	Local knowledge and direct experience
Corporate dependence	Self reliance
Durable and long shelf life food characteristics	Taste, smell, nutrition, quick ripening characteristics along with the appreciation for traditional varieties

CHAPTER 3: LITERATURE REVIEW OF CSA STUDIES

Because CSA is novel, the majority of literature is an introduction to the overall concept of CSA. For instance, CSA has been offered as an alternative food system (Groh/McFadden 1997, Henderson/Van En 1999, Guenthner 1996, Lamb 1996, and Allen/Sachs 1993). In addition, much attention has concentrated on the mechanics of initiating and operating a CSA farm (Van En 1988, Gibson 1993, Gregson 1996, Grubinger 1993, Marcelina 2000, and Vandertuin 1987). Over the past few years, however, farmers and researchers have been looking beyond CSA 'basic ingredients' to examine CSA relationships (Cone/Myhre 2000, DeLind/Ferguson 1997, Cooley/Lass 1995, and Kane 1997). These studies analyzed why shareholders join CSA farms, benefits of membership, levels of involvement, and disadvantages that lead to turnover.

One focus of CSA research has been examining the reasons members join CSAs. Cynthia Abbott Cone and Andrea Myhre conducted a five-year study (1993-1998) of eight CSA farms in the Twin Cities metropolitan area of Minnesota. One of the main objectives was understanding shareholders' motivation for farm membership. Cone and Myhre used harvest surveys and interviews. The survey return rate was about 50% (377 returned surveys) in addition to 74 phone and 64 face-to-face interviews. Cone and Myhre found the top reasons for belonging to a CSA farm included: concern for a healthy environment (92%), desire for fresh and organic food (90% and 91%, respectively), and support of local food sources (86%). Moderately important reasons were knowing the food source and production methods (80%), supporting small-scale agriculture (73%),

and reducing packaging (65%). There were a few reasons with low importance ratings, such as community involvement (35%), price (33%), and farm festival events (11%).

Jack Cooley and Daniel Lass studied three CSA farms located in the greater Amherst-Massachusetts area in 1995. Their data came from 192 completed surveys (71% return rate). The important reasons for joining were similar to those of Cone and Myhre. Specifically, the most important reasons included support of local farming (97%), quality of produce (93%), and environmental concerns (72%). The members provided other reasons such as food safety concerns (59%) and community service (also 59%).

Laura DeLind and Anne Ferguson also looked at reasons for CSA membership, however in relation to gender. In 1996, they conducted a case study of a CSA farm in mid-Michigan and gathered data from 51 completed surveys (64% return rate) and three focus group sessions with 15 self-selected members. DeLind and Ferguson found fresh vegetables, environmental concerns, and support of local farming to be the most important reasons for both women and men to join the CSA.

Another study of one CSA farm in Iowa by Clare Hinrichs and Kathy Kremer examined reasons for CSA membership, this time in relation to class. Their class factors included income, occupation, and education. Their data of one CSA farm stemmed from 41 telephone surveys and two focus group sessions between 1997 and 1998. Hinrichs and Kremer grouped given responses into three categories: food quality, support/belief, and food availability/affordability. They found those who provided food quality and support/belief reasons were more advantaged members, while those who stated food availability/affordability reasons were less advantaged members.

Another CSA research focus has been the perceived benefits associated with farm membership. For example, DeLind and Ferguson found women perceived the farm as peaceful or tranquil and as a place to positively affect social welfare through community building. The benefits for the men included opportunities to meet people and learn new farming techniques.

Cooley and Lass examined benefits through an economic valuation of CSA shares. They made comparisons between CSA share price and the retail value for the same amount of food. Cooley and Lass documented the weekly weight amounts for every item in the share. Three sample weights were averaged. Herbs and flowers were not included in the cost comparisons. Cooley and Lass determined retail share value by averaging three common grocery market prices for the same quantity of CSA produce. The weekly retail values were summed for all weeks of the growing season to estimate the total retail values of the shares. Through this comparison, Cooley and Lass found all three CSA farm shares to cost less than equivalent quantities of retail produce (both organic and conventionally grown). There were cost-saving differences among the three farms, which were attributed by scale of the CSA farm, operational philosophy, and resource limitations.

CSA researchers have also been looking at membership participation. For instance, Cone and Myhre examined the issues of spirituality and civic responsibility in relation to farm involvement. Spirituality entailed member responses concerning the CSA food as a gift or expressing deep appreciation for the farm and food. Civil responsibility statements included the importance of sharing the risk of farming and environmental well being. Cone and Myhre defined three groups (low, medium, and high

participation). Those considered in the low participation group paid their CSA fee, picked up their share at a distribution site, and visited the farm zero to one time during the growing season. Moderate participants paid the fee, picked up their weekly produce, visited the farm two times to assist with harvesting, delivering shares, or attending events. In addition they served on a farm committee or held distribution at their home. Those in the high participation category performed the previously listed activities in addition to visiting the farm at least three times during the growing season. Cone and Myhre found moderate and high participants (88% and 93%, respectively) made more spiritual references to the farm and food than low participants (37%). They also found a similar pattern for civil responsibility (79% high, 66% moderate, and 63% low participants). Thus Cone and Myhre state that high participation correlated with a deeper understanding and commitment to CSA.

With respect to participation, DeLind and Ferguson found distinct gender differences in their study. Both female and male shareholders recognized that women were more actively involved than men in the farm. DeLind and Ferguson concluded that this participation suggests CSA as a form of women's movement. However, they found that member participation did not challenge or change gender relationships, roles, or images.

The final issue commonly discussed in the CSA research literature has been shareholder retention. In 1996, Deborah Kane conducted a seven-farm study to examine shareholder retention. CSA membership turnover is usually high at rates of 30 to 50% from one year to the next. Because of the dynamics of CSA, a committed group of members is important to the success and vitality of CSA. Thus, Kane sought to establish

the reasons for continuing or discontinuing CSA membership. Data were gathered from two types of sources, telephone interviews with new members at the beginning of the growing season and surveys distributed at the end of the growing season. Thus, Kane studied how the perceptions of members change during the growing season. Through telephone interviews, Kane found the members' perceived value of CSA experience declined for 64% of the new members. Similarly, almost ¼ of those surveyed said that they would rejoin the CSA if the share price were reduced. For the most part, the opinions of new members changed because their spring time expectations were not met. Using the surveys (77% response rate), Kane found several correlations with regard to CSA satisfaction, retention, and participation. First, members who consumed a great variety and quantity of produce as a result of joining the CSA were more satisfied than others whose diet did not change. Second, those who used CSA produce to meet at least 75% of their vegetable needs were more satisfied than those who used non-CSA produce sources. Third, Kane found that members who participated in any of the farm activities were more satisfied than those who did not partake in events. Furthermore, members who had been participating in CSAs for more than one year were more satisfied than the members who were not involved in farm activities.

Similarly, other CSA studies have made references to those obstacles that contribute to high membership turnover. Cooley and Lass identified limited variety, seasonality, pick-up inconvenience, and harvest risks as disadvantages. Their survey results indicated that shareholders were generally satisfied. Nevertheless, 24% said that there was too much food; 23% stated that farm visits were inconvenient; 14% of the

respondents were concerned with the variety of farm produce; and 11% were dissatisfied with the lack of choices.

Likewise, Cone and Myhre contacted 74 non-returning members from five of the eight CSA farms. Their interviews indicated inconvenience (54%) and variety or quantity (50%) as significant reasons why shareholders did not review their membership. Hence, Cone and Myhre concluded that members who learned to adapt and make lifestyle changes (such as seasonal consumption and produce distribution) in addition to farm participation were more likely to return the next growing season.

In summary, these CSA studies examined members' reasons for joining, their levels of involvement, and the benefits and disadvantages as seen by shareholders. Some of the studies also considered the above variables in relation to class or gender. They demonstrated the attitudes of CSA members reflect CSA principles, which allow CSA to be conceptually and functionally different from conventional agriculture.

One avenue not explicitly considered in these four studies is the physical distance separating members' homes from the CSA farm and how distance correlates with a member's depth of commitment to CSA. Therefore, this thesis explores how distance between farm and member household affects CSA shareholder participation and satisfaction. Questions concerning the distance factor will provide insightful answers to whether distance inhibits the overall success of CSA as an alternative to the conventional food system. The next chapter defines specific research objectives and corresponding hypotheses.

CHAPTER 4: RESEARCH OBJECTIVES AND HYPOTHESES

Within this chapter, the problem statement is restated and the research questions and hypotheses are introduced. These questions center on the effect of distance on CSA and are examined using hypotheses developed from the concept of distance decay.

Statement of Problem and Research Questions

As stated before, current literature does not examine the role of location in relation to joining, participating, and leaving CSA. Furthermore, past CSA studies have not analyzed the maximum travelling distance for active participation.

The study of the distance factor is important because CSA contains within it a distance dichotomy. For instance, CSA decreases the distance in knowledge and interaction that currently separates producers and consumers. At the same time, consumers are travelling farther to obtain their produce than they would if they bought it at the nearest supermarket. The consumer must justify the distance, time, and processing inconveniences with benefits received from CSA participation. Therefore, the main question to be addressed by this research is whether CSA brings consumers closer to producers despite inconveniences that develop out of this new direct relationship. In other words, does CSA *in practice* reach its *conceptual potential* of ‘closing the distance gap’? Second, how far is too far for active CSA membership? Third, can physical separation distance be correlated to the reasons members provide for joining the farm or the level of involvement in farm activities? Finally, if distance is not a factor, then what other reasons help explain strong and weak CSA participation?

Research Hypotheses

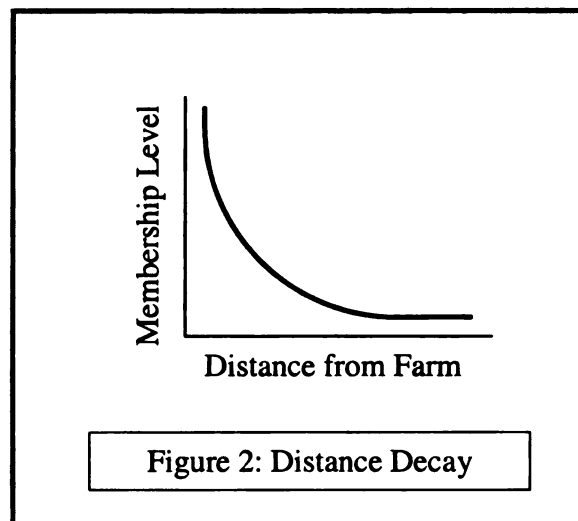
Agricultural-location geography has been influenced by the theory of Heinrich von Thunen. The von Thunen model explains agricultural land use patterns in terms of land rent (Knowles/Wareing 1976). Similar to Ricardian rent, which is based on soil fertility differences, von Thunen theory demonstrates that economic returns from land vary by location. Stated simply, economic returns decrease with increasing distances to the central market because of transportation costs. Von Thunen applied this concept to an 'isolated state' for various types of agricultural production (such as dairy, vegetables, cattle, grains, and timber). This theory was based on the following assumptions: (1) uniform relief, soil fertility, climate conditions, and yields; (2) no outside trade; (3) single central market; (4) single transportation mode; and (5) proportional transportation costs to distance (Knowles/Wareing 1976).

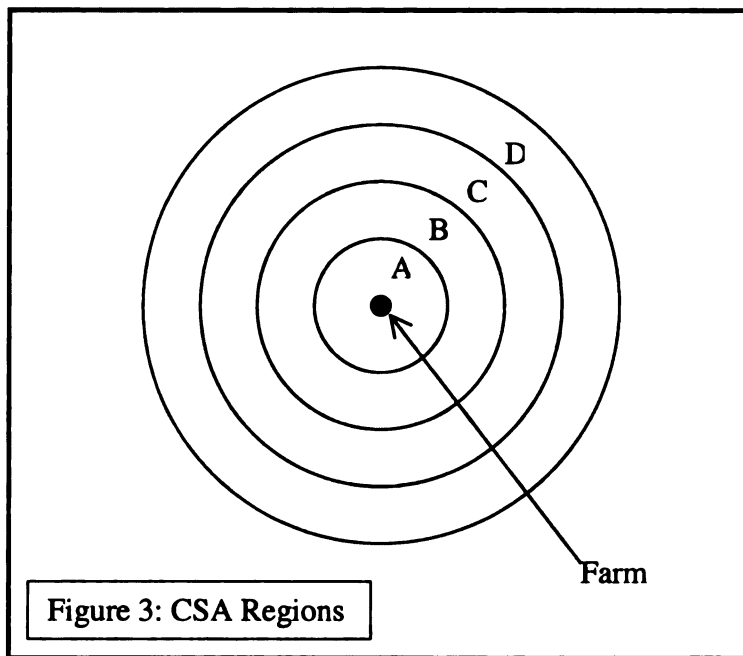
Given these assumptions and the significant changes in agriculture over the past 100 years, the von Thunen model may no longer provide the basis for agricultural geography (Napton 1989). In addition, CSA, by its basic nature, requires a different model for understanding the direction of the relationship between producer and consumer. For example, CSA brings the 'market' (shareholders) to the farms whereas conventional agriculture brings the farm products to the market. Therefore, the von Thunen model is not especially useful for examining CSA and member commitment in a geographical context.

The distance-decay effect may be one possibility for incorporating geographic theory into CSA. Distance decay states that the level of interaction between two places

(such as farm and household) declines as distance increases (Stutz/Souza 1998). The shape of the function depends on the variable measured. Furthermore, regions can be created from the two-dimensional function by intercepting the x-axis to establish region boundaries and then rotating the function 360° about the y-axis. We can apply this theory of spatial interaction to CSA using Figures 2 and 3.

From the distance-decay effect, I made several initial hypotheses regarding the effects of distance on a given CSA farm. First, I anticipate a CSA farm to attract the majority of its shareholders within close proximity of the farm. Membership would decrease as distance from the farm increases. Second, I expect levels of active membership (work/trade shares and farm activity participation) to be greater with members living near the farm than those who live farther away. Thus, I envision CSA membership to be represented by varying concentric regions that extend out from the farm. Such regions (A, B, C, and D) are depicted in Figure 3 on the following page.





I hypothesize that these regions will have characteristics that will be evident in levels of participation and possibly in reasons for joining. For Region A, the members live relatively close to the farm; thus, distance and travel time to farm are not hindrances to participation. Accordingly, I anticipate members to be very active in the farm, such as having work or trade shares, serving on the core group, and/or attending classes and events. In addition, I envision this region's members to understand the US food system and be deeply committed to the CSA concept. Thus, I expect that members strongly consider the environmental and social benefits of CSA when deciding to join the farm. Likewise, I anticipate shareholders in this region to continue their membership season after season.

For Regions B and C, shareholders live farther from the farm. Hence, I suspect distance and travel time to be factors that contribute to lower levels of participation and

that there will be more non-working shares than working shares in these regions.

Furthermore, based on the inconvenience of increased distance, I expect Region C to draw fewer members than Regions A and B. I assume shareholders from Regions B and C are ‘discovering’ the US food system. As a result, these members are trying a new way of buying food, are learning of organic agriculture, and are attracted to ‘family farm romanticism’. Considering these premises, I hypothesize there will be more first year members in these two regions than in Regions A and D.

For Region D, the members live the farthest from the farm. Thus, distance and travel time to farm is most likely to be hindrances to working in the fields and participation in events. To justify the travel inconvenience, I hypothesize that these members have a deep commitment to the CSA concept. Similar to Region A, I envision Region D members to understand the US food system and strongly consider the environmental and social benefits of CSA when deciding to join the farm. Finally, I anticipate shareholders in this region will continue their membership season after season.

These hypothesized regional hypotheses are summarized below and are listed in Table 3 on the following page:

- Members of Regions A and D have a better understanding of conventional agriculture and commitment to CSA than members in Regions B and C.
- Regions A and D have more returning members than Regions B and C.
- Members of Regions A and B are most active, while members in Regions C and D have the lowest level of involvement.

The following chapter discusses how the research questions and hypotheses are applied to one CSA farm and the methods used to complete my research objectives.

Table 3: Hypothesized Regional Characteristics

<u>Region</u>	<u>Expectations for Members and Location</u>
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A	Deeply committed to GRCF and CSA concept Understand US food system Make conscious choice for GRCF participation Distance and time not hindrances for participation Participate frequently (farm labor, core group, classes) Gardening experience and seasonality knowledge More likely to be working shares Membership for more than 1 season
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B	"Discovering" US food system Attracted to family farm romanticism Attracted to organic fad (try something new) Want children to see farm activities Grocery-store expectations of produce (perfect, large) Distance and time are factors More-likely to be non-working, 1st year shareholders
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C	Weak interest or participation May have own gardens Distance and time are factors
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D	Deeply committed to GRCF and CSA concept Understand US food system Make conscious choice for GRCF participation Distance and time are factors Can not participate in as many activities as desired More-likely to be non-working shareholders Membership for more than 1 season
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CHAPTER 5: CSA CASE STUDY

WITH STUDY DESCRIPTION AND METHODS

The purpose of this chapter is to describe how I carried out the research objectives presented in the previous chapter to one CSA farm. To begin, I provide the selection criteria I used for choosing a farm. Next, I describe the location and operations for the case study. Finally, I explain the methods used to obtain data for answering my research questions.

Case Study Selection

To better understand the role of location within CSA, I focused my research on one CSA farm, Grand Rapids Community Farm² (GRCF) during the 2000-growing season. I chose GRCF as the case study for many reasons. First, GRCF has a relatively large membership (100 shareholders) from which to survey and draw conclusions. Second, GRCF was established in 1997, and thus has new and returning members. Third, GRCF's operation is consistent with the CSA model. For instance, GRCF offers work and trade shares, provides a variety of classes and activities, requires direct interaction with the members through on-farm distribution, and grows/raises diverse crops and animals. Finally, I worked as a GRCF intern during the 1999-growing season and became familiar with the farmers, members, and core group.

I recognize that the data for my thesis is taken from only one farm over the course of one growing season. For this reason, this case study does not aspire to establish

² The name of the CSA farm has been changed to better preserve its anonymity.

universal CSA patterns. Any conclusions that I make based on this research can only provide a catalyst for further research. Nevertheless, I believe that the findings will be important for GRCF and other CSA farmers while adding an additional dimension of distance to the deeper understanding of the alternative agricultural movement.

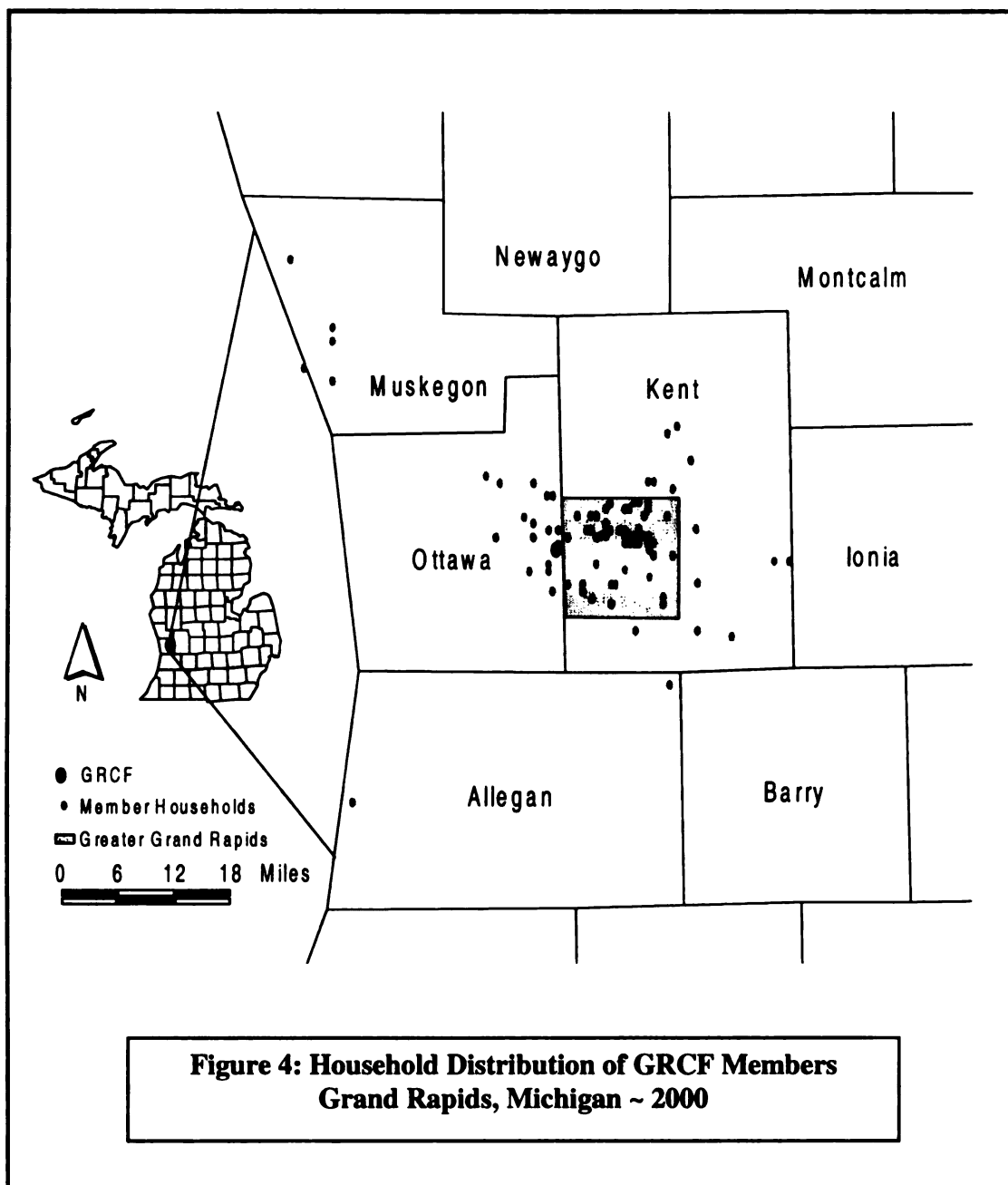
Permission to conduct this research at GRCF during the 2000-growing season was granted by the Michigan State University Committee on Research Involving Human Subjects (UCRIHS). My UCRIHS application, IRB# 00-207 Category 1-C, was approved on April 24, 2000 and valid through April 24, 2001.

Site Description

Grand Rapids Community Farm (GRCF) is a CSA farm, located in southwest Grand Rapids, Michigan³. GRCF is approximately 7 miles from downtown Grand Rapids. GRCF began in 1997 as part of an environmental charter school but has operated independently from the school since 1999. Approximately five acres of GRCF land have been donated by a nearby farming family, along with two barns and a greenhouse for use in production, distribution, classes, and farm events.

During the 2000-growing season, the GRCF membership was comprised of 117 households. Figure 4 maps the distribution of member households. GRCF offered non-working shares for \$385 and working shares for \$308. The latter required 24 hours of work during the 19-week growing season. Approximately 75% of members had working shares and 25% had non-working shares. On-farm distribution occurred on Wednesday

³ The 1999 estimated population for the Greater Grand Rapids Metropolitan area is 1,052,092. The source for this estimate is the Population Estimates Program, Population Division, U.S. Census Bureau, Washington D.C. 20233 (<http://www.census.gov/population/estimates/metro-city/ma99-01.txt> viewed on February 23, 2001).



afternoons (3:30 to 6:30 PM) and Saturday mornings (9:30 AM to 12:30 PM). Produce harvests were based on the number of members coming either on Wednesday or Saturday. The first distributions of the 2000-growing season occurred on Wednesday, June 21st and Saturday, June 24th. Distribution for the growing season ended with the annual harvest festival on Saturday, October 28, 2000.

Methods

The primary data for this study were obtained through membership surveys, farm records, and phone interviews. The survey focused on (1) reasons for joining GRCF, (2) event participation, (3) preferred and maximum distance from farm and (4) produce purchases outside the farm. During the spring of 2000, GRCF farmers and coordinators (along with my academic advisors) pre-tested the survey. The surveys⁴ were then mailed to all GRCF members at the beginning of July 2000. Within one month, 96 of the 117 completed surveys were returned (82% return rate).

CSA literature indicates many reasons why members are attracted to CSA. I incorporated 18 possible reasons for joining into the survey. The members were asked to rate each reason as “1 = Very Important”, “2 = Somewhat Important”, and “3 = Not Important” in deciding to become part of GRCF. For analytical purposes, the 18 reasons were grouped into five categories and are shown below in Table 4.

The first group is based on food quality factors, such as fresh, organically grown food. The second group concentrates on social reasons, such as being part of a community and meeting new people. The third group centers on food system educational

⁴The surveys were coded with shareholder identification numbers to track responses anonymously. A copy of the membership surveys can be found in Appendix A.

Table 4: Reasons by Group

Group	Reasons within Group
Food Quality	organically grown food non-genetically altered food fresh nutritious food food packaging reduction
Social Activities	being part of a community meeting new people recreation working on a farm prior CSA experience
Education	trying new/unconventional food knowing where and how food was grown partaking in classes
Environmental and Political Factors	activism <i>Green</i> philosophy supporting small-scale agriculture supporting local agriculture
Conventional Factors	convenient food affordable food

factors, such as trying new food and knowing how and who produced it. The fourth group reflects environmental/political reasons, such as 'green' philosophy and supporting small-scale local agriculture. And the final group is based on conventional tendencies, such as affordable and convenient food.

In addition to the reasons for becoming farm shareholders, the survey inquired about event participation. I asked the members how often during the growing season (hours per month) they took part in GRCF events. They were also asked whether they would be more involved in the farm if they lived closer to GRCF. Similarly, they were asked how far they would travel to be a member of GRCF. For these questions, the possible choices for distance and time travel were given in incremental ranges. I also included questions about obtaining produce from outside sources such as grocery stores, farmers' markets, buying clubs, or self-gardening, and how far they would travel for those outside food sources.

In addition to the surveys, I consulted GRCF records of membership participation in classes⁵, potluck dinners, and other events. During the 2000-growing season, there were ten classes, five potlucks, and an event for creating the children's garden. These events were open to all GRCF members. This compilation indicated actual participation in farm events.

Using the GRCF shareholder directory in conjunction with Street Atlas address-matching computer software, I determined network distances and the average time required for each household to make a one-way trip to GRCF. I also used Street Atlas to find latitude and longitude coordinates of the members' household locations. These

coordinates were then converted into decimal degrees and plotted with ArcView software.

Finally, I phone-interviewed 28 farmers⁶ of other CSA farms in Michigan, Ohio, and Indiana⁷. These interviews usually took less than 20 minutes. We primarily discussed the location of their farm and how far their members lived from their CSA. The purpose of talking with other CSA farmers was to develop a broader perspective for establishing a distance limit for CSA membership. I also phone-interviewed 1999 GRCF members who did not renew their farm commitment in 2000. Of the 44 non-returning members, I held informal phone interviews with 28 individuals. These phone interviews were brief, lasting less than ten minutes. The main topics discussed were their reasons for both joining and leaving GRCF and whether they considered participating in CSA again.

To summarize, the majority of my data was derived from one case study, GRCF, located in western Michigan. The criteria used to select a CSA farm included membership size, years of operation, model practices, and my familiarity with farmers and members. Membership surveys and phone interviews were used to understand the reasons for joining, level of event participation, preferred and maximum distances from the farm, and produce purchases outside the farm. The results of the case study and interviews are presented in the following chapter. Discussion of the findings is also provided in Chapter 6.

⁵ Classes offered during the 2000-growing season included: canning basics, cooking demonstrations, chemical-free lawns and soil fertility, international organic agriculture, pasture-fed meat production, yoga, alternative health and healing, and Latin dancing.

⁶ A copy of the questionnaire used during the CSA farmer interviews can be found in Appendix B.

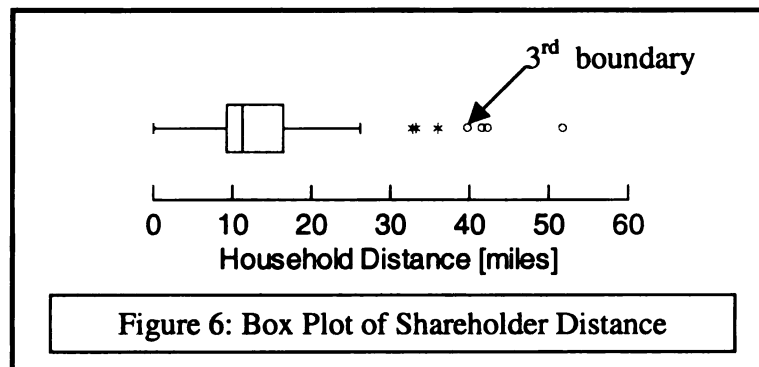
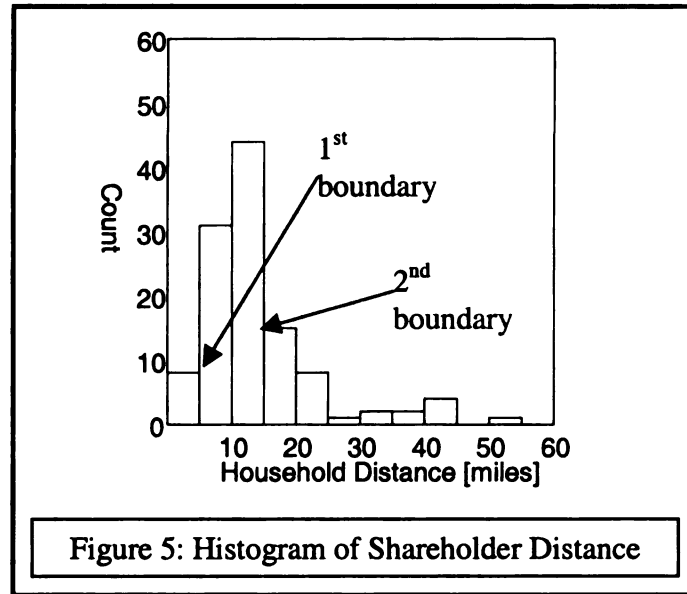
⁷ These farms were identified in *The Many Faces of Community Supported Agriculture* (MOFFA 1999).

CHAPTER 6: RESULTS AND DISCUSSION

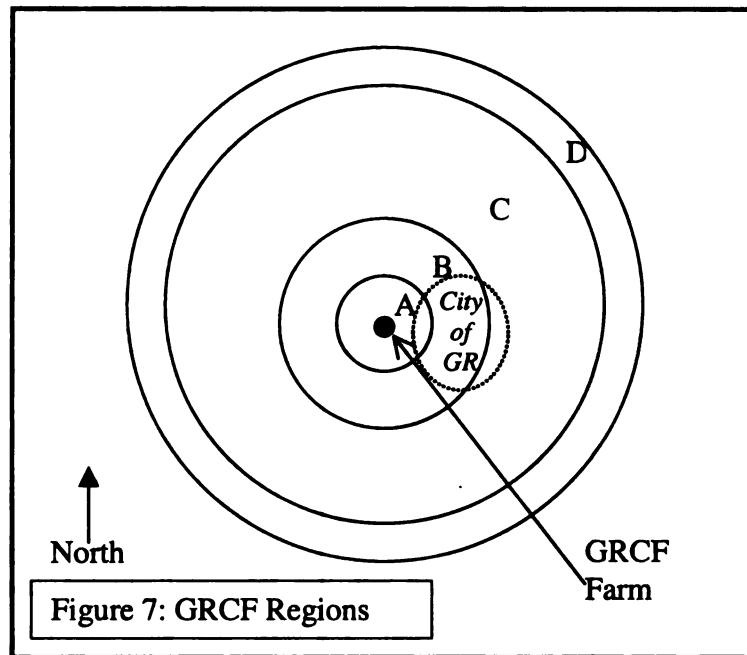
The collected findings from the surveys and interviews are presented below. I first explain how I applied my regional hypothesis to the GRCF case study. I then examine reasons for joining, participation, and length of membership in relation to distance. Next, I investigate maximum travelling distances at GRCF and other CSAs. Finally, I conclude by broadening the results in order to analyze CSA's ability to reconnect consumers and producers. Thus, the research questions are answered below in order of specific (GRCF case study) to general (CSA).

GRCF Region Definition

To begin the data analysis, I used the GRCF member household locations to define the distance-decay regions. To find the specific distances forming the region boundaries, I used the distance histogram and box plot. The distance histogram establishes natural breaks in the shareholder locations from GRCF. Figure 5 shows that the majority of the members live 10 to 15 miles from the farm. Accordingly, I set regional boundaries at these natural breaks for Region A (0 to <5 miles) and Region B (5 to 15 miles). Next, I used the box plot of shareholder distance to find the regional boundary between Regions C and D (see Figure 6). I defined the C/D boundary at the distance where the outlying households began. Therefore, Region C contains members living between 16 and 40 miles while Region D includes any households beyond 40 miles from GRCF.



Thus, I adapted the regions to meet the characteristics of my case study. For instance, GRCF is located in rural area to the west of the city of Grand Rapids. For this reason, Region A is the immediate rural area surrounding the farm, which transitions into suburban and urban settings forming Region B. Because the Greater Grand Rapids Metropolitan area is to the east of GRCF, the eastern half of Region B contains the majority of the members. On the eastern side, Region C follows the transition of suburban to rural while the western half is rural. Region D is formed by the ‘outlying’ members. These adaptations are shown in Figure 7.



Regional Analysis

Once the regions were established, I examined the dominant reasons for joining, level of participation, and length of membership for each of the four regions.

Reasons for Joining

I hypothesized that distance influences the reasons for joining GRCF. The 18 possible reasons for joining were categorized into five groups and that members were asked to rate each reason on a scale from 1 (strong factor) to 3 (weak) as a deciding factor. Each of these groups received an average score for the four regions. The following table reflects both the predicted and actual scores (Table 5).

For Region A, I expected the members to demonstrate a strong commitment to the social and environmental aspects of GRCF. The actual scores indicate that they did

Table 5: Grouped Scores

	Food Quality		Social Activities		Education	
	<u>Predicted</u>	<u>Actual</u>	<u>Predicted</u>	<u>Actual</u>	<u>Predicted</u>	<u>Actual</u>
A <5 miles	Strong Score	1.4 n=6	Strong Score	2.4 n=4	Strong Score	1.3 n=5
B 5-15 miles	Moderate Score	1.3 n=69	Moderate Score	2.0 n=69	Moderate Score	1.6 n=69
C 16-40 miles	Moderate Score	1.4 n=17	Weak Score	2.1 n=15	Weak Score	1.6 n=17
D >40 miles	Strong Score	1.3 n=4	Weak Score	2.1 n=4	Strong-Mod Score	1.5 n=4

	Env/Political Factors		Conventional Factors	
	<u>Predicted</u>	<u>Actual</u>	<u>Predicted</u>	<u>Actual</u>
A <5 miles	Strong Score	1.4 n=5	Weak Score	2.3 n=4
B 5-15 miles	Moderate Score	1.5 n=69	Moderate Score	2.2 n=68
C 16-40 miles	Weak-Mod Score	1.7 n=17	Moderate Score	2.3 n=16
D >40 miles	Strong Score	1.8 n=4	Weak Score	1.6 n=4

consider food quality, education, and environmental/political factors important reasons for joining the farm. For this region, social activities and conventional reasons were not important deciding factors. I was surprised at the low ranking of social activities compared to the other regions. Perhaps those in this region already gardened or felt established in their rural community, and thus did not need additional connections.

For Regions B and C, I anticipated a moderate commitment to and understanding of CSA, relating to scores of 2's and 3's for all five groups of reasons. The scores for Region B show food quality to be the most important reason for joining with education and environmental/political reasons close behind. Region C had higher than expected scores for food quality, social activities, education, environmental /political factors. This result is positive for CSA since it demonstrates that shareholders understand the deeper meaning of CSA, as something more than just an alternative method for obtaining produce.

Similar to Region A, I expected the members of Region D to be strongly committed to CSA. Therefore, I predicted strong scores for environmental/political factors and weak scores for conventional reasons (like cost and convenience). To my surprise, food quality ranked higher than environmental/political factors. Conventional reasons for joining also scored higher than expected. I can not explain these results. Perhaps they reflect the small sample within this region (n=4). Social activity received the weakest score, as anticipated.

Statistically speaking, the results of Regions B and C are more conclusive due to the number of households in those regions. Because scores for the other regions are based on very small samples (n<10), the validity of the results can be questioned.

Overall, however, the most important reasons for joining were food quality (score=1.3), environmental/political factors (score=1.5), and education (score=1.5), while the least important reasons were social activities (score=2.0) and conventional factors (score=2.2). Past studies by Cone and Myhre, Cooley and Lass, and DeLind and Ferguson reflect similar findings. Taken together, food quality and philosophy (both environmental and local) are the dominant reasons for joining a CSA farm while community involvement and cost are not as important. This then raises the concern of how *community* supported agriculture can function with low *community* involvement. The following section examines the level of involvement from the community of members in hope of identifying the factors that contribute to strong participation.

Participation

Over the course of the 2000-growing season, there were 16 events (10 classes, 5 potlucks, and 1 children's gardening event) in which membership attendance was recorded. On average, shareholders attended 1.1 events. With respect to regional divisions, I expected to see greater participation from members located closer to GRCF than those who lived further away. This assumption was based on a combination of two premises: first that members of Region A would be deeply committed to CSA and therefore participate in more farm events, and second that those living closer to GRCF (Regions A and B) would not be as inconvenienced by the traveling time. From Table 6, we see that both Regions A and B have greater than average participation. Accordingly, the outer regions have less than average participation. We need to note again the low

numbers of shareholders in Regions A and D and possible statistical insignificance because of the small number of members in those three regions.

Table 6: Participation by Region	
	<u>Number of Events</u>
Region A	2.2
< 5 miles	n=6
Region B	1.4
5 to 15 miles	n=78
Region C	0.3
16 to 40 miles	n=27
Region D	0.2
> 40 miles	n=5
Average	1.1 (n=116)

The survey attempted to distinguish perceived from actual participation. For example, members were asked how often they would like events to occur. Approximately 70% of respondents said they would like one to two events per month (n=89). The survey also asked the number of hours per month they were able to participate in farm activities. Based on 85 responses, shareholders indicated they had 6.1 hours per month for GRCF events. With the typical farm activity taking three hours (including driving time), members would be able to participate in 2 events per month. Because shareholders on average actually attended less than two events during the entire season, there is clearly disparity between what members thought they could do and how much they did.

I also asked the shareholders whether they would be more likely to participate in farm events if they lived closer to GRCF. More than 75% responded that they would not participate in farm events if they lived closer to the farm (n=90). Such a strong response drives the question ‘if distance is not a factor, what keeps people from active involvement in the farm?’

To begin to answer this question, I looked for the most active shareholders. Based on attended events, the GRCF Core Group (which consisted of 10 members) participated in 6.1 activities on average, in addition to their duties of farm labor and management. Household locations of the Core Group break down as follows: 1 member in Region A, 7 members in Region B, and 2 members in Region C. On average, the Core Group members live 10.9 miles from the farm. I believe that the Core Group’s intense participation in GRCF reflects their commitment to the concept of CSA. To support this belief, I reexamined the reasons the Core Group provided for joining GRCF. As anticipated, food quality (score=1.2), environmental/political factors (score=1.3), education (score=1.5), and social activities (score=1.8) were important reasons for the Core Group when deciding to join the farm; while conventional factors were not important reasons. A question for further research could ask what it is about these people (their background, education, or religion) that influences their strong CSA commitment. Likewise, another question could address whether CSA farms can function without Core Groups. The table on the next page summarizes the comparisons made between the Core Group and the membership body (Table 7).

Table 7: Core Group and Member Comparisons					
	Reasons for Joining				
	<u>Food Quality</u>	<u>Social Events</u>	<u>Education</u>	<u>Env/Pol.Factors</u>	<u>Conv. Factors</u>
Core Group	1.2	1.8	1.5	1.3	2.3
Members	1.3	2.0	1.6	1.5	2.2

Participation		Distance	
<u># of Events</u>		<u>[miles]</u>	
Core Group	6.1	Core Group	10.9
Members	1.1	Members	13.9

Another factor contributing to participation is the type of share, non-working verses working or trade share (see Table 8 below). I expected members who live closer to GRCF to be more likely to have work or trade shares because they are not inconvenienced with travel time to the farm and/or have a strong commitment to CSA. Likewise, those living farther from the farm may prefer to pay extra for the non-work share in exchange for no work requirement and reduced time commitment.

Table 8: Share Type by Region				
	<u>Share Type</u>		<u>Share Type</u>	
	Non-Work	% of region	Work or Trade	% of region
Region A < 5 miles	3	50%	3	50%
Region B 5 to 15 miles	16	23%	53	77%
Region C 16 to 40 miles	5	29%	12	71%
Region D > 40 miles	0	0%	4	100%

I was surprised to see the large number of work/trade shares for all regions (75% of the 96 total reporting shares). Such a high percentage may reflect members' interests in gardening or learning more about growing food. My anticipated trend of decreasing work/trade shares with distance is not reflected in Table 8. On the contrary, every region but Region A has more than 70% of its shares are work/trade shares. It is important to note that seven families could not fulfill their work requirements and "bought out" their work share by late August. On average, these seven families lived 11.1 miles from GRCF. In hindsight, it would have been helpful to ask why they could not complete their work requirements. With that information, we might have been able to see some basic patterns.

A final element contributing to participation is the number of years a member has been part of GRCF. The majority (70%) of members are 1st year members. The following table demonstrates that those who have been members the longest live closest to the farm (Table 9). I expected both Regions A and D to have 'older' members than Regions B and C. Region D consists of only new members, thereby losing all its members from the previous season. Such findings indicate that distance is a factor for renewing membership and thus participating in CSA.

Furthermore, we can examine participation by 'membership age'. From Table 10, we see a positive correlation between the number of years as a GRCF member and event participation. In other words, the longer they are members, the more likely the shareholders attend farm events.

Table 9: Membership Age	
	<u>Average # of Years with GRCF</u>
Region A	2.5
< 5 miles	n=6
Region B	1.6
5 to 15 miles	n=69
Region C	1.4
16 to 40 miles	n=17
Region D	1.0
> 40 miles	n=4

Table 10: Participation by Membership Age	
	<u>Average # of Activities</u>
1st Year	0.7
2nd Year	1.2
3rd Year	2.8
4th Year	4.2
Average	1.2 activities

These results signify that distance, personal commitment/philosophy, and years of membership influence participation. These findings reinforce the results of other CSA studies. For example, Cone and Myhre found that deeper understanding of and commitment to CSA correlate to higher levels of participation. Similarly, Kane found that members that have been with the farm for more than 1 year were more satisfied with their CSA experience than new members. The follow sections explore the maximum distance that members are willing to travel for CSA.

Travelling Distance and Time Limits

The members were asked a series of travel questions based on how far they would like to live from the farm and how far they would travel to participate in GRCF. The great majority of members would like to live within ten miles (79%) and within fifteen minutes (83%) from the farm (n=91). Using similar cumulative percentages, more than 75% of respondents said they would not travel more than 30 miles and or 35 minutes to participate in GRCF (n=94).

I also inquired about alternative sources of produce, such as grocery stores, farmers' markets, gardening, and buying clubs used during the growing season. More than 85% of the respondents said that they buy produce at grocery stores, which were on average 3.7 miles from their homes (n=84). Similarly, 59% of the members purchase produce at farmers' markets, which were 3.8 miles away (n=55). About 32% gardened and 25% used a buying club (either out of their home or from NorthFarm Cooperative out of GRCF). Thus, we see that members are willing to travel further for CSA produce than they typically would travel to the store or farmers' market. Unfortunately, I did not ask the members how often such trips were made. Looking back, this information may demonstrate that frequent trips of shorter distance to grocery stores could surpass weekly trips to GRCF. Nevertheless, there is a cap on distance and time spend traveling to the farm. The next section expands the question of distance limits to other CSAs.

Locational Perspectives from other CSA Farms

Using the CSA directory *The Many Faces of Community Supported Agriculture*, I contacted by telephone 28 CSA farmers at the end of the 2000-growing season (MOFFA

1999). We discussed CSA operations at their farm and the estimated distance of their members. These 28 CSAs are quite diverse. Farms ranged from 0.5 to 30 acres with membership as low as three and as high as 125 shareholders, and attracted members from small towns, suburbs, and urban centers.

I asked the farmers to estimate how far their members live from their farm. On average, shareholders lived 15 miles from the CSAs (n=20). In the same way, the farmers were asked how far the members would travel to their farm. Their estimated maximum distance was 24 miles (n=22). These values are very similar to GRCF member responses. For this reason, we can establish a distance limit. I calculated this limit to be approximately 25 miles⁸ for the 23 farms. This distant limit is significant for the planning of future CSAs and the marketing of current CSAs. With this and additional information, farmers can focus their efforts within a certain area (CSA 'marketshed') surrounding the farm.

Up to this point, I have discussed the distance factor in relation to joining and participating in CSA. I have also used distance limits for establishing a CSA 'marketshed'. These findings and discussion contribute to the main research question (whether CSA *in practice* reaches its *conceptual potential* of 'closing the distance gap'), which will be considered in the next section.

⁸Math: 24miles*22farms + 30miles*1farm = 558 → 558miles/23farms = 24.3miles for 23farms.

'Closing the Distance Gap'

As stated earlier, CSA creates a distance dichotomy: CSA decreases overall distance between producers and consumers while at the same time, consumers travel farther to obtain produce from the farm than they would from the grocery store.

Through the GRCF case study and interviews with other CSA farmers, we can conclude that CSA does reduce the physical distance and exchanges between consumers and producers. The separation distance decreases from 1,300 miles to 25 miles; while the number of exchanges drops from 6 to 1 or 2 depending on whether distribution is held at the farm or off-site. We can also conclude that CSA reduces social distance, expressed as a lack of knowledge of the food system. By joining a CSA farm, members learn who grows their food and where it is produced. Consumers also gain an additional 'hands-on' understanding of how their food is produced, processed, and transported by actively participating in the fields and at distribution. Thus, we see that CSA *in practice* does, in fact, reach its *conceptual potential* of 'closing the distance gap'.

Despite these positive findings, CSA has to overcome several barriers, such as convenience and member expectations, in order to attract and retain members. These barriers do not reflect a failure within CSA. Rather, they signify consumers' inability and/or unwillingness to adapt to CSA. Cone and Myhre state similar conclusions in their CSA study: "lifestyle changes, lack of choice, and inconvenience played a large role in deterring membership...shareholders had to learn to adapt" (Cone/Myhre 2000, p.196).

At GRCF, the annual turnover rate is about 50%; in other words, approximately 50 of the 100 members leave GRCF from one season to the next. This high of turnover has been experienced at other CSAs (Kane 1997). Because of the high turnover rate, I

decided to contact 1999 GRCF members who did not rejoin the farm for the 2000-growing season. By talking with past members, I hoped to better understand how convenience and expectations factored into their decision to leave the farm.

Consumers' preference and reliance on convenience is one major challenge for CSA. In our 24 hour - 365 days per year society, we have grown accustomed to convenient supermarkets that stock uniform produce year round. Such supermarkets have masked the natural cycles of our seasons, especially here in the northern Midwest. We can purchase tomatoes, melons, and peppers year-round, plus things that do not grow here like bananas, avocados, or mangos. Thus, the seasonality of CSA is a difficult challenge for many shareholders, as revealed by 43% of 1999 GRCF members, my interviews with other CSA farmers, and studies by Cooley, Lass, Cone and Myhre.

In addition, we can easily go to a supermarket when we have a desire for certain foods; we usually do not consider going into a field to harvest our food. Consequently, CSA farmers are finding a general unwillingness of members to work in the fields. From the interviews, one CSA farmer stated that 'everyone needs to contribute for CSA to work' and 'busy lifestyles' keep shareholders from contributing.

Furthermore, in relation to supermarket-style convenience, members desire washed, weighed, bagged, and delivered produce. Such desires have two negative effects: (1) disengagement from the total CSA experience and (2) reallocation of farmer's time and energy from field to activities that cater to the members. Returning to GRCF, 61% of 1999 members stated that it took too much time and effort to pick up and process their farm produce. Many said they had to struggle to put in the work hours. Similarly, shareholders from 2000 were not fulfilling their work requirements. The Core Group

made several attempts, including calling households and posting signs, to remind members that their assistance was needed in the fields. As stated before, a handful of families with working shares “bought out” their work requirements by the end of the summer at a cost of \$79.

Another major challenge for CSA is the expectation of *cheap food*. For many years, we have seen relatively minor inflation in the price of our food. Thus, consumers are used to and expect *cheap food*. As stated by CSA farmers during the phone interviews, ‘people have a problem paying for good food’ and they believe they have a ‘constitutional right to cheap food’. “Cheap food means happy constituents, and industrial agriculture promises cheap food” (McGee 1993, p168). This *cheap food* expectation rolls over to the member’s opinion of CSA share value. Frequently, members view the share value by its cost (\$) relative to what and how much produce they will receive during the growing season. For example, almost one-fifth of past GRCF members thought the share cost was too expensive. They may have overseen the non-measurable benefits of participating in CSA for \$X per year. These benefits include developing new friendships with the farmers and fellow members, learning new gardening or cooking techniques, or eating unfamiliar foods. Hence, we need to develop better ways of thinking/valuing our food, in more than purely economic terms. We also should acknowledge the negative ecological and social externalities of conventional food production. Through CSA, producers and consumers support a system that not only reduces such externalities, but also contributions to the health of rural communities and the environment. Ultimately, consumers first need to understand the food system and

then need to realize that they are vital participants in the food system. Glenn McGee makes the following remarks about the accountability of the consumer for food choices:

“The choices we make about what we eat, and where it comes from, and how it was raised are likewise critical to personal responsibility. Buying from a local farmer sends a message about preference directly to the source, and has impact on the food market by helping to eliminate the entire group of transporters and wholesalers and such who thrive on irresponsible land use. Learning about what is in season tells us a great deal about when it is responsible to buy things” (McGee 1993, p170).

In summary, “the future potential of CSA movement lies in the possibility of consumers taking more initiative and developing a greater sense of social responsibility for all the food they consume” (Lamb, 1996, p.19).

CHAPTER 7: SUMMARY AND CONCLUSIONS

Community Supported Agriculture represents a conceptually and functionally different system for producing food because CSA farms are explicitly local institutions. They acquire their characteristics through their interactions with and reflections of local environmental, social, economic, and historical conditions. They are embedded in the fundamental geographies and ecologies of place.

As previously stated, the foundations of CSA rest within the direct connection and conscious commitment between growers and consumers. CSA developed, in part, from discontent with conventional, large-scale agriculture. Thus, CSA is a deliberate movement to combat the negative environmental, economic, and social externalities associated with the conventional food system. Through direct farmer-consumer relationships, physical and social distances are minimized, thereby reducing or eliminating many externalities such as energy requirements and air pollution from transportation, packaging and produce wastes, revenue disparity, and loss of knowledge and nutrients. Yet distance also serves as a barrier to active and continuing CSA participation because members are traveling farther to obtain their food. For this reason, I chose to examine the importance of one element of the geography of place: the impact of distance on the activity of members of Grand Rapids Community Farm (GRCF), one of the ten CSA farms in Michigan. Evaluation of this one element addressed attitudinal and philosophical attributes of CSA members in relation to their level of participation in CSA activities.

The distance element was selected as it had not been a focus of other related studies. In short, I found that distance was related to the level of active participation as well as 'membership age'. For instance, shareholders who lived closer to the farm participated in more events and were more likely to renew their membership than those who lived farther from the farm. In addition to distance, my results identified other factors (such as personal commitment and philosophy) that contribute to the reasons for joining CSA and the level of member involvement. Within this study, I also established a distance limit of 25 miles, which represents the average maximum distance for a member to travel for CSA. I found that distance, viewed as a time travel inconvenience, was a major factor when deciding not to renew farm membership. Other reasons included discontent with the type of food, too expensive, too much food, inconvenience for children, and gardening for self. Finally, I demonstrated that CSA *in practice* reduces the physical and social distance between growers and consumers, thus reaching its *conceptual potential* of 'closing the distance gap'.

In conclusion, this study has shown that distance does have an impact, but that it has to be understood in the larger context that examines CSA as a unit with ecological and societal goals. Key factors of an enabling environment for CSA include the following:

- an effective market, defined as sufficient people with adequate commitment and resources to support CSA. For this study, the presence of the city of Grand Rapids was critical for establishing an effective market.
- leadership, expressed in a Core Group who will insure the continuity of the CSA.

- an institutional structure, that incorporates flexible and diverse skills and interests to reflect the local, social, and environmental context.
- an ability to respond to the constraints of the conventional system to ensure the viability of CSA.

While economic viability is essential, CSA offers much more than an economic alternative for producing and obtaining food. CSA also offers alternative views of human nutrition, ecological health, social and community awareness, and a philosophy of ecological and human sustainability.

These findings contribute to the CSA literature by reinforcing the primary reasons members join the farms (food quality, environmental and political factors) and the relationships among participation, years of membership, and general understanding of the food system (deep understanding $\Leftrightarrow$ greater participation $\Leftrightarrow$ continued membership). My results were primarily derived from one case study. Therefore, I make no attempt of expanding the results to establish universal CSA patterns. Nevertheless, such findings are useful to CSA farmers for planning and recruiting.

Having completed my research objectives, I can now ask additional questions for future CSA research. For example, to what extent can CSA 'compete' with conventional agriculture and become a mainstream method for obtaining food? Such questions lead to the examination of CSA barriers. In the previous chapter, I stated that consumers' expectations and their preference and reliance on convenience are major obstacles for CSA. Furthermore, there are physical and institutional limitations. With regard to physical barriers, we need to consider length of growing season. For many parts of the US, agricultural operations are not year-round. Such limitations have implications for

CSA since farmers cannot grow food during the winter. Some CSA farms extend the growing season through the use of greenhouses and frost protection. Others provide storage crops such as potatoes, onions, and squash during the off-season. However, can potatoes, onions, and squash provide all of a family's produce needs for several months? I would argue that members would obtain food from sources other than the CSA farm during the winter. Another problem associated with the physical environment is crop failure or reduced harvest during periods of flooding, drought, or pest infestations. With such crop failure or reduction, the shareholders still need food; and similar to off-season, the members will need to obtain their food from some place other than the farm. That some place else is likely to be the retail market, the same system CSA is trying to avoid (Groh/McFadden 1997). Therefore, how can food (outside the retail market) be provided during times of crop failure or off-season?

In addition to physical limitations, we should also consider institutional barriers, such as food and real estate prices determined by the market economy. Prices paid at the retail level often do not reflect the full costs of production, which include soil erosion, agrochemical pollution, or fair labor wages. How can CSA, which tries not to exploit resources (human and non-human) and attempts to account for full pricing, compete with conventional agriculture in the same market economy (Lamb 1996)? Likewise, the scale difference between smaller CSA farms and larger conventional farms impacts the ability to purchase real estate and pay land taxes. Do CSA farms have the revenue to afford land mortgages, which are set by existing market values? Can the community within CSA establish land trusts, thereby assuring affordable access and full opportunities for more sustainable agriculture (Groh/McFadden 1997)?

Such structural elements may limit CSA from becoming anything more than an alternative. Likewise, CSA is not for everyone; it is one of many possible alternatives of local food and farming systems. Nevertheless, such recognition does not mean that CSA possibilities are limited. CSA is new and is working against a conventional food system that has been functioning for many years. Thus we should not discount the potential strength of CSA in the future. Such strength will rest in the adaptability, flexibility, and diversity of CSA members and farmers to meet their individual and collective needs and goals. Finally, the ability for cooperation among CSA and subscription farms, farmer's markets, urban gardening projects, and local restaurants will contribute to the future impact of alternative and local agriculture.

APPENDICES

APPENDIX A

GRCF Membership Survey

Member Information

1. What kind of LECF share do you have? (please circle all that apply)

A. Working ShareB. Non-Working ShareC. Trade Share
2. How many people in your household eat your share? (please write below)
Number of Adults (age 18+) _____ Number of Children (<18) _____
3. How many growing seasons have you been a member of Living Earth Community Farm? (please write below – if this is your first year, write “new member”)

4. How far is LECF from your home? (please circle one below)

A. Less than 5 miles

E. 20 to 24 miles

I. 40 to 49 miles

B. 5 to 9 miles

F. 25 to 29 miles

J. 50 to 59 miles

C. 10 to 14 miles

G. 30 to 34 miles

K. More than 60 miles

D. 15 to 19 miles

H. 35 to 39 miles
5. How long does it take to reach LECF from your home? (please circle one below)

A. Less than 5 minutes

E. 20 to 24 minutes

I. 40 to 49 minutes

B. 5 to 9 minutes

F. 25 to 29 minutes

J. 50 to 59 minutes

C. 10 to 14 minutes

G. 30 to 34 minutes

K. More than 60 minutes

D. 15 to 19 minutes

H. 35 to 39 minutes
6. Are you active in any of the following? (please circle all that apply)

A. Carpool to LECF with other members

B. Alternate distribution pick-ups with other members

C. Use drop off locations (other than Lubber’s farm) to pick up your weekly share

Member Interest and Participation

7. How important were each of the following in your decision to become a share member of LECF? (1=very important, 2=somewhat important, and 3=not important)

Organically-grown food	1	2	3
Non-genetically engineered food	1	2	3
Reducing food packaging	1	2	3
Convenient food	1	2	3
Affordable food	1	2	3
Prior CSA experience	1	2	3
<i>Green</i> Philosophy	1	2	3
Activism	1	2	3
Supporting small-scale agriculture	1	2	3
Supporting local farmers	1	2	3
Being part of a community	1	2	3
Meeting new people	1	2	3
Recreation	1	2	3
Working on a farm	1	2	3
Fresh, nutritious food for your family	1	2	3
Trying new foods or unconventional varieties	1	2	3
Knowing where and how your food was grown	1	2	3
Education (food system, seasonal eating, Organic farming, LECF classes)	1	2	3
Other (please explain at side)	1	2	3

8. Which type of LECF activities have you participated in this year? (please check all that apply)

	Year 2000	Past Years
A. Assisted with field work (planting, weeding, harvesting)	_____	_____
B. Assisted with <i>The Soil Sentinel</i> (LECF newsletter)	_____	_____
C. Attended LECF festivals/pot-luck dinners	_____	_____
D. Attended LECF educational programs/classes	_____	_____
E. Helped organize LECF events	_____	_____
F. Served as a LECF Core-Group Member	_____	_____
G. Worked at distribution	_____	_____
H. Other: _____	_____	_____
I. None	_____	_____

9. How many hours during a month are you able to participate in LECF activities and events? (please write below)

_____hrs/month

10. How often would you like events to occur? (please circle below)
- A. Once a week C. Once a month
B. Twice a month D. Once during the growing season
11. Would you be more likely to participate in any of the above activities if you lived closer to LECF? (please circle below)
- A. YES B. NO
12. How close would you like to be to LECF? (please circle one choice for distance and one choice for time)
- Distance
- | | | |
|----------------------|-------------------|-----------------------|
| A. Less than 5 miles | E. 20 to 24 miles | I. 40 to 49 miles |
| B. 5 to 9 miles | F. 25 to 29 miles | J. 50 to 59 miles |
| C. 10 to 14 miles | G. 30 to 34 miles | K. More than 60 miles |
| D. 15 to 19 miles | H. 35 to 39 miles | |
- Time
- | | | |
|------------------------|---------------------|----------------------|
| A. Less than 5 minutes | E. 20 to 24 minutes | I. 40 to 49 minutes |
| B. 5 to 9 minutes | F. 25 to 29 minutes | J. 50 to 59 minutes |
| C. 10 to 14 minutes | G. 30 to 34 minutes | K. More than minutes |
| D. 15 to 19 minutes | H. 35 to 39 minutes | |
13. What is the maximum distance you would travel to participate in LECF? (please circle one choice for distance and one choice for time)
- Distance
- | | | |
|----------------------|-------------------|-----------------------|
| A. Less than 5 miles | E. 20 to 24 miles | I. 40 to 49 miles |
| B. 5 to 9 miles | F. 25 to 29 miles | J. 50 to 59 miles |
| C. 10 to 14 miles | G. 30 to 34 miles | K. More than 60 miles |
| D. 15 to 19 miles | H. 35 to 39 miles | |
- Time
- | | | |
|------------------------|---------------------|----------------------|
| A. Less than 5 minutes | E. 20 to 24 minutes | I. 40 to 49 minutes |
| B. 5 to 9 minutes | F. 25 to 29 minutes | J. 50 to 59 minutes |
| C. 10 to 14 minutes | G. 30 to 34 minutes | K. More than minutes |
| D. 15 to 19 minutes | H. 35 to 39 minutes | |
14. What percentage of the total produce that your household consumes comes from LECF? (please circle below)
- A. 75 to 100% B. 50 to 74% C. 25 to 49% D. 0 to 24%

15. If LECF does not provide your household with all of your produce needs, where do you obtain the rest? And how far (in miles) is this food source to your home?
- A. Supermarket _____ miles
 - B. Farmer's Market or Road-Side Stand _____ miles
 - C. Grow for Self/Gardening
 - D. Buying Club (e.g. North Farm) _____
 - E. Other _____

Demographic Information (*To be used to develop possible CSA market areas*)

16. Your gender? (please circle below)
- A. Female B. Male
17. Which of the following best describes the location of your home? (please circle below)
- A. Urban B. Suburban C. Rural
18. How many adults (age 18+) in your household work full time? (please circle below)
- A. None B. One C. Two D. Three E. More than four
19. What are the occupations for all adults (age 18+) in your household who are employed? (for example, if two people in your household are teachers, write "2" after Education)
- A. Administration _____
 - B. Assembly, Operation, or Transportation _____
 - C. Construction or Repair _____
 - D. Education _____
 - E. Natural Resources _____
 - F. Healthcare _____
 - G. Management _____
 - H. Other Professional Occupations _____
 - I. Sales _____
 - J. Service _____
 - K. Other: _____

20. What is the highest level of education completed in your household? (please circle below)
- | | |
|-----------------------------|------------------------------------|
| A. High School or Less | D. Bachelor's Degree |
| B. Some College (No Degree) | E. Some Graduate Study |
| C. Associate's Degree | F. Graduate or Professional Degree |
21. What was the total gross household income last year (1999)? (please circle below)
- | | |
|----------------------------------|----------------------------------|
| A. Less than \$25,000 per year | C. \$50,000 to \$75,000 per year |
| B. \$25,000 to \$50,000 per year | D. More than \$75,000 per year |
22. Does LECF provide you with a sense of community? (please circle below)
- A. YES B. NO
23. Is a sense of community important to you? (please explain below or on next page)

Thank you for completing this survey!

**Please return this survey in the enclosed
*self-addressed stamped envelope by July 18, 2000.***

**Please write any additional comments
*for Jamie Picardy below.***

If you have any questions, please contact Jamie Picardy
at (616) 784-7369
925 Coventry NW
Walker, MI 49544

APPENDIX B

CSA Farmer Questionnaire

1. What is the area of land in production/cultivation and how many members do you have this season?
2. On average, how far do your members live from your farm?
3. In your opinion, how far do you think your members are willing to travel to participate in your CSA farm?
4. Do all of your members come to the farm for their weekly share or do you have off-site distribution?
5. Where is your farm located?
 - A. Rural
 - B. Small Town
 - C. Suburban
 - D. Urban/Metropolitan
6. Where do the majority of your members live?
 - A. Rural
 - B. Small Towns
 - C. Suburban
 - D. Urban/Metropolitan
7. On average, what percentage of your members does not return from one growing season to the next?
8. In your opinion, why do members leave CSA?
9. In your opinion, what are the hindrances to the success of CSA?
10. Other comments...

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