
Diego Thompson
Iowa State University

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“Somos del campo”
Latino/a gardeners and farmers in two rural communities of Iowa
A Community Capitals Framework approach

by

Diego Thompson

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in partial fulfillment of the requirements for the degree of
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Co-Majors: Sustainable Agriculture; Sociology

Program of Study Committee:
Cornelia Flora, Major Professor
Jan Flora
Rich Pirog
Gail Nonnecke

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Chapter 1. General Introduction

Newcomers in Marshalltown and Denison, Iowa

In the last three decades many Latino immigrants moved to Iowa from other states and/or from their home countries. The Hispanic population in Iowa quadrupled from 1990 to 2006, and these increases are even larger in counties with meat packing plants (State Data Center 2008). In Marshall County the Latino population in 1990 was 292 and in 2007 was estimated as 5,455 (U.S Census Bureau 2008). In Crawford County the Latino population in 1990 was 98 and in 2007 was estimated as 3,129 (the U.S. Census Bureau 2008). Meanwhile, the white Non-Hispanic population decreased in each of these counties (U.S Census Bureau 2008).

After the restructuring and relocation of meatpacking initiated by Iowa Beef Producers- IBP in 1960 (Fink 1998), meat packing companies recruited low-wage workers from Mexico, Central America, and beyond. The majority of the Latino immigrants to the Midwest come from Mexico, particularly from rural areas of the western states of Michoacán, Jalisco, and Guanajuato (Durand et. al. 2001). In Marshalltown, networks developed with the residents of Villachuato, Michoacán, Mexico, provide a stable labor force for the local Swift meatpacking plant (Woodrick 2006). By the turn of the 21st century, Villachuatans were close to one-half of the total resident Latino population in Marshalltown (Grey and Woodrick 2002).

A study done by Lewis and Tafoya (2008) among Latino former farmers in Denison found that most of the Latinos came from Mexico (70%). The remaining 30% were from Central America. The main contributing Mexican States and Central American countries were as follows: Jalisco (26%), El Salvador (20%), Campeche (10%), Michoacán (8%), and Guatemala (8%). Denison has four meatpacking plants where the greater part of Latino immigrants work. In that study the majority of the interviewees, who were randomly selected from Latino people in local stores, churches, a soccer league, community gardens, and other places, worked in these meatpacking plants.

Many small villages and small towns in the Midwest have experienced challenges in integrating newcomers (Chapa and Millard 2004), and consequently in many towns there are two parallel worlds in the daily social dynamic: one Anglo and the other Latino. That parallelism sometimes impedes the positive impacts of each population on the other through effective mechanisms of complementary integration. If there can be greater
integration of these two worlds. Latino immigrants have great potential for changes in agriculture and food systems through diversified agriculture and local food markets.

In this study I identify the mechanisms which make it possible for Latinos to farm and garden in Iowa’s small towns and the degree to which immigrants are integrated in these towns through their cultural, human, and social capitals. I use Denison and Marshalltown, Iowa as illustrative case studies. I identify the mechanisms of integration by exploring critical aspects of community capitals that institutions must mobilize to generate successful Latino gardeners and/or beginning farmers in Iowa’s communities.

Context of this study

Agriculture in the core of the Midwest is characterized by two predominant monocrops (soybean and corn), environmental degradation, and financial incentives that support that system. Those financial incentives support ever larger machines replacing human labor on larger and larger farms. Iowa is the most ecologically altered state in the U.S. Between 1850 and 2000, Iowa converted 99 percent of its prairies to crop and pasture land, 95 percent of its wetlands were drained, and 75 percent of its forests were cut (Natural Heritage Foundation 2002). As a consequence, the ecological diversity and the diversity of agricultural production in the state have been reduced to the industrial production of two coarse grains and confined livestock. Iowa imports most of the vegetables and fruits consumed in the state, because most Iowans farmers cultivate only corn and soybean, which are highly dependent for profitability on subsidies, and which require high levels of agricultural inputs. Meanwhile, the youth (white non-Hispanic) emigrate to metropolitan areas or other states, leaving their family farms.

Latino immigrants counterbalance that loss of Anglo young people in rural Iowa towns. They also could contribute to diversifying agricultural production and localizing food systems. Most of the Latino immigrants in both Marshalltown and Denison have background in diversified agricultural operations, and they express interest in gardening and farming in the U.S. (Lewis and Tafoya 2008). Lewis (2007) describes the experience of Mexican immigrants and how they could become farmers in Iowa. Lewis claims that “These farmers have great potential to contribute to sustainability in Iowa agriculture, given a proclivity among them toward diversified horticultural and livestock production, local marketing, eating fresh, whole foods, and being productive members of a rural community” (Lewis 2007: 36-37).
Although there are only a few commercial Latino farmers in Denison or Marshalltown, nationally Latinos are the fastest growing ethnic or racial group in farming in the U.S. (National Agricultural Statistics Service- NASS 2007a). During 1997 and 2002 the number of farms in the U.S. with Hispanic principal operators grew 51.2 % and from 2002 and 2007 grew 14% from 72,347 to 82,462 farms (NASS 2005; 2007a). In addition, the value of products sold by those farms also increased dramatically (NASS 2007b). But the number of Latino gardeners is much higher, providing an important source of healthy food for themselves, their relatives, and friends. Lewis (2007) describes how different institutions can facilitate the process of Latinos beginning to farm in this country. She suggests how both institutions and Latino farmers can contribute to the sustainability of food systems and agriculture in the U.S. I base my research on the premise that Latino immigrants have backgrounds which can contribute to sustainable food systems. Their past experiences prepare them to produce a variety of grains, fruits, vegetables, and livestock by introducing crops and animals with which they are familiar. While they may not raise the same varieties or breeds in the same way as in their home countries, they have the potential to change and support diversified agriculture and local food systems in the Midwest. That potential of Latinos to be part of changes in agriculture and food systems is recognized and developed by institutions and movements that work with beginning and immigrant farmers in rural areas and in the urban agriculture movement. Programs like Agriculture and Land-Based Training Association (ALBA) in California or the Latino Community Gardens in New York City have successfully integrated Latinos into sustainable agriculture programs, local food markets, and food security efforts. Sustainable agriculture in urban areas has historically been focused on food security (Allen 1999), rather than markets. Initial production of immigrant farmers in Denison and Marshalltown is for home consumption, increasing household food security and diversifying their diet. During the last three years Iowa State University Extension, the Leopold Center for Sustainable Agriculture, Iowa Valley Community College in Marshalltown (MCC), the National Center for Appropriate Technology, National Immigrant Farming Initiative (NIFI), the M and M Divide RC&D (Resource Conservation and Development) Council, and the Prairie Rivers of Iowa RC&D Council worked together to support beginning Latino farmers’ and gardeners’ projects in Iowa. This thesis analyses the organization and impact of that support.
My study of Latino/a beginning farmers and gardeners in Denison and Marshalltown was carried out under the umbrella of projects coordinated by those institutions, which provided some logistical and financial support for the study. Those projects focused on the inclusion of Latino/a beginning farmers and gardeners in the local markets and support of the farming and gardening processes to adapt knowledge from one context to apply in another. Because of that close cooperation, the research findings will enrich the ongoing processes of many of those projects and will provide new tools for other projects with Latino/a gardeners and beginning farmers.

Case Study Sites
Denison

The Denison Community Gardens have been organized for more than three years by different institutions and private companies, including M and M Resource Conservation and Development (RC&D) in Carroll, the Leopold Center for Sustainable Agriculture, National Immigrant Farming Initiative (NIFI), Farmland Foods, and Iowa State University Extension. In 2009 Denison Community Gardens had 18 plots averaging 20 feet by 10 feet (M and M RC&D, 2009). The participants pay from 20 to 40 dollars for their plots, depending on the size. Fourteen families participated; thirteen of them Latino. All of the gardeners worked in the meatpacking plants in Denison (Tyson and Farmland).

Four Denison gardeners were included in this study. In selecting these four gardeners I wanted to include different nationalities, genders, and ages. I selected two gardeners with long experience and two with recent experience in that community garden. My work as a research assistant in the Sociology Department in Iowa State University gave me the opportunity to meet with all of the gardeners and be involved in the different steps before, during, and after the farming season. During the spring of 2009, I participated in the organization of three classes for the gardeners carried out in the Crawford County ISU Extension Office in Denison. The topics of these classes included instruction on pesticides and fertilizers, planning and planting the garden, and selling in the farmers market. The classes were organized by “Scaling to up to Market: Building Capacity among Immigrant Community Gardens” supported by Iowa State University Extension and National Immigrant Farming Initiative.

The overall goal was to give the gardeners knowledge and tools to grow and subsequently sell their products in the Denison Farmer Market. However, only a few
gardeners were interested in the classes, and none of them wanted to sell their products during the 2009 growing season. Results from the evaluation of that project (in which I participated) are included in this study and contribute to the conclusions and recommendations of this thesis.

Marshalltown

In Marshalltown, gardeners and farmers were chosen from two different sites where Latinos participate in gardening and farming: the Marshalltown Community Gardens, located in the Iowa Valley Community College in Marshalltown (MCC), and the farm used by the students of the course, Start Your Own Diversified Farm, which is also located on land owned by MCC. These beginning farmers are part of COMIDA (County of Marshall Investing in Diversified Agriculture), organized by MCC, Iowa State University Extension, and Prairie Rivers of Iowa Resource Conservation and Development (RC&D) in Marshalltown, among other institutions and collaborators.

The community garden at MCC has been used by people from Marshalltown and its hinterland for more than thirty years. In the past, the garden was much bigger than today, with 300 plots at its peak\(^1\). In 2009 the community garden had 22 participants; eight were Latino families and 14 were Anglo families. The plots size in 2009 was 40 feet by 40 feet and rented for $32 per plot.

The land used by the students of Start Your Own Diversified Farm is being purchased by the College (MCC) from a local farmer and was offered to the students that took that course during the spring of 2009. That land had been farmed without any chemical products for more than three years, and MCC is in the process of seeking organic certification. In 2009 the land was used by six families, five of them Latino. The sizes of the small-scale incubator plots used by the Latino beginning farmers of this study averaged two acres. These were larger plots than the students had cultivated in the past. For all of the Latino/as that participated in the course and then planted on the land that experience represented beginning steps in becoming farmers at a market scale. In the past they gardened on smaller plots, on rented land, and/or in their back yards. Two of the Latino beginning farmers that were part of COMIDA had their first marketing experiences in the Des Moines Farmer Market and other places like stores in

\(^1\) Notes from conversations with Anglo gardeners in the Community Gardens and the farm manager at MCC.
Marshalltown and Ames. One of them sold white corn to other Latinos on the streets and in a Mexican store in Marshalltown. Some of those market opportunities were facilitated by the organizers of Start Your Own Diversified Farm, and others were found by the beginning farmers through their social networks in town.

**Goals of this study**

According to the analysis of farming and Latinos in rural areas of Iowa (Lewis 2007; Lewis and Tafoya 2008), Latino immigrants have the potential to become diversified farmers and contribute sustainably to agriculture and food systems in this state. First generation Latino immigrants in Denison and Marshalltown have a rich background in diversified agricultural production in their home countries (Lewis and Tafoya 2008), and most of them want to farm in the U.S., although not necessarily as their sole livelihood strategy.

The purpose of this study is to explore the experiences of Latino gardeners and beginning farmers in two rural communities of Iowa in gardening and farming vegetables and fruits. I describe the agricultural backgrounds that these gardeners and beginning farmers brought from their countries and the specific skills that they learned in the immigration process and from previous gardening. I explore the meaning that farming and gardening have for them, and how their agricultural background and knowledge represent not only assets, but also challenges faced as they gain practical experience with their crops in Iowa. I analyze the knowledge and skills that they have learned during their recent agricultural activities in Iowa and how social, human, and cultural capitals interact with other capitals in that process.

I describe the mechanisms by which Latino/as become gardeners and beginning farmers, exploring their motivations and the community capitals that they mobilized. I also explore the importance of farming and gardening experiences for social networks not only within the Latino communities in these two towns, but also with long-term residents in Denison and Marshalltown and beyond. I analyze the different meanings that the gardening has for the families involved, finding that those meanings represent mechanisms of cultural reproduction and education, and interact with other capitals. I explore the social and cultural meaning that the products from the gardens and their exchange have within the household and for the rest of the community.
Finally, I want to produce a product that can inform future academic studies and rural development projects that seek to include the Latino population in agriculture and local food systems in the U.S. and other countries.

**Organization of the thesis**

This thesis includes a chapter written as a journal article that will be submitted in June 2010 to an on-line journal: *The Journal of Agriculture, Food Systems, and Community Development*.

I include a third chapter with general conclusions and recommendations for future research and projects.

In the appendix I include the questions used in the interviews. At the end of the thesis I acknowledge all the people that directly or indirectly supported this study.
Chapter 2. “Somos del Campo”: Latino/a gardeners and farmers in two rural communities of Iowa.

A Community Capitals Framework approach.

A paper to be submitted in June 2010 to: The Journal of Agriculture, Food Systems, and Community Development

Diego Thompson

Abstract

Using the community capital framework, this study describes what makes it possible for Latinos to become gardeners and beginning farmers in two rural Iowa communities. Four in-depth interviews were carried out in Denison and four in Marshalltown with Latino/a gardeners and beginning farmers participating in gardening and farming programs. I used participant observation in people’s homes and garden plots to understand the meaning of gardening and farming among Latinos. Human, social, and cultural capitals are essential elements for Latino gardeners to succeed. The interaction between these three capitals mobilizes other community capitals to improve household well-being. These Latinos bring to their new gardening and farming their previous knowledge of agriculture, fresh food and how to cook it from their countries of origin and other parts of the U.S. Recommendations center on how to mobilize the most critical community capitals.

Introduction and Literature Review

From 1990 to 2000 the Latino population in U.S grew 57.9%, and in 2001 Latinos were 12.5% of the total population in the country (Guzmán 2001; Díaz and Guzmán 2002). The growth was even more rapid in the Midwest (Díaz and Guzmán 2002), particularly in rural towns with meatpacking plants like Denison and Marshalltown, Iowa. Labor markets and local enterprises in both towns were affected by the new immigrants. While early employment was in meat packing, other “invisible” employment developed in the informal sector (Tienda and Raijman 2000).

Beginning in 2005, Latinos in those two towns participate in farming and gardening programs organized by Iowa State University Extension, the Leopold Center for Sustainable Agriculture, Iowa Valley Community College in Marshalltown (MCC), National Center for Appropriate Technology (NCAT), National Immigrant Farming
Latino gardeners and beginning farmers in these programs opened new opportunities of social, economic, and cultural integration in local agriculture and local food systems. In Marshalltown, two Latino gardeners and farmers were chosen from “COMIDA”\(^2\) and its related course, Start Your Own Diversified Farm\(^3\) at Iowa Valley Community College in Marshalltown and two from the Community Gardens at the same college. In Denison, four respondents were chosen from Latino gardeners participating in the Denison Community Gardens. I used the Community Capitals Framework (CCF) to identify elements that facilitate Latino/a involvement in these enterprises, the challenges, and the implications that these farming and gardening initiatives have within the Latino community and the larger community. The CCF includes seven types of capital: natural, cultural, human, social, political, financial, and built (Flora and Flora 2008). “These capitals can either enhance or detract from one another, and resources can be transformed from one form of capital to another” (Flora and Flora 2008: 17). By examining their interactions, we can understand which are more important and critical in the experience of Latino gardeners and beginning farmers in these two rural communities of Iowa. This framework provides tools for the creation of social inclusion that can make rural communities more socially just, and economically and environmentally sustainable.

In the case of immigrants that represent a vulnerable sector of the society, appropriately combining analysis of the capitals can assure better inclusion and improvement of immigrants’ livelihood conditions, as well as for the rest of the community. According to Bourdieu (1986), the unequal distribution of capitals leads to the appropriation of profits by those with more capitals, giving them the power to impose laws that reinforce unequal social structures that are more favorable to (financial) capital and its reproduction (Bourdieu 1986: 246). Analysis of the interaction of different capitals, as well as their distribution among the Latino gardeners and the communities in which they live can offer a better understanding of the importance of Latino/a participation in gardening and farming in the Midwest. The goal is to increase social justice and equality in food and agricultural systems. The CCF framework can provide tools for future initiatives in similar circumstances.

\(^2\) County of Marshall Investing in Diversified Agriculture
\(^3\) In Spanish: “Comience su propia granja diversa”
Description of all the capitals involved in Latino/a gardening and farming experiences will help to better understand how the different capitals are configured in each setting and how they interact, facilitating the process by which Latino immigrants can get access to land, cultivate and consume their own fresh food, and perhaps market some of their products.

*Human Capital*

In Denison and Marshalltown, Lewis and Tafoya (2008) found that 83% of their 111 Latino respondents of rural origin grew up on farms that were owned by their parents or grandparents in their countries of origin, Mexico, El Salvador, and Guatemala. They left their family farms at an average age of 19 years (Lewis and Tafoya 2008: 6-7). Over half of the respondents became farm workers, and 83% had experience with vegetable production as well as mixed systems of vegetables, grains, and livestock (Lewis and Tafoya 2008: 6). Experiences that Latinos bring from their background in agriculture in their countries, gardening (Houndagneu-Sotelo and Ramirez 2009), and farm worker jobs in the U.S. gave them skills in a diverse spectrum of agricultural production. Ninety-four percent of the respondents that participated in the Lewis-Tafoya study in Denison and Marshalltown with farming experience had performed some type of fieldwork, including planting, harvesting, weeding, and pruning (Lewis and Tafoya 2008: 8). Fifty-two percent had experience in selecting and saving seeds, 60% had experience in selling/marketing agricultural products, and 24% had experience in preserving food through drying or canning (Lewis and Tafoya 2008: 8).

Those skills and abilities are part of human capital (Flora and Flora 2008) and are essential in Latinos’ performance not only in their activities at the gardens, but also in other jobs and as part of their daily lives. Although several common measures of Latino workers’ skills fail to value forms of human capital other than that received in educational institutions (Baker and Hotek 2003), skills transmitted through practical experience are very important in mobilizing other capitals for farming and gardening in their current circumstances. In the U.S., immigrants face barriers in accessing educational programs (human capital), which keeps them in low skilled jobs with frequent migration to find jobs (financial capital) (Dozi and Valdivia 2005). Documentation, legal status, and low formal skills increase the vulnerability of immigrants.
There are several examples from the community gardening literature about how community gardens offer spaces for knowledge exchange and education (Lawson 2005). In the case of Latino gardens in New York City (NYC), educational activities for and among children not only offer the opportunity to learn about gardening and farming within ethnic groups, but also offer the opportunity to exchange knowledge between groups and with the agencies that support the gardens. These educational activities promote civic agriculture (Kransy and Saldivar-Tanaka 2004). The mobilization of human capital in education programs for adults and children can provide spaces for building social capital.

I hypothesize that:

1. Latino/a gardeners and beginning farmers have an agricultural background (initial human capital).

2. Gardening and farming among Latinos serve to transmit agricultural and food knowledge (increase human capital).

3. Gardening and farming mobilize other community capitals.

Social Capital

Social capital is composed of networks of more or less institutionalized relationships of mutual acquaintance and recognition as a member in a group that provides to each member “the collectively-owned capital” (Bourdieu 1986: 249). In the U.S., community gardens programs historically tried to reinforce the importance of the social relationships within those enterprises (Lawson 2005). As Winne (2008) points out, the most important word in “community garden” is community.

The social capital that individuals and groups establish can be a critical community characteristic, because “It can influence, as well can be influenced by, the stock and flows of other capitals inside and outside the community” (Emery and Flora 2006: 19). Social capital can be positive or negative for individuals, groups or even for nations (Portes 1998). As Glover (2004) describes in his study about social capital in community gardens, social capital can be both a benefit and cost, depending on the position gardeners occupy within the functioning social network.

In the Latino community gardens in New York City, social activities connected to the gardens are essential elements in motivating the participants (Kransy and Saldivar-Tanaka 2004). In addition, social capital was transformed into political capital to the point
that community development appears to be more important than agricultural production (Kransy and Saldívar-Tanaka 2004).

As Coleman (1988) points out, social interaction enriches the quality of the relationships among individuals, and it can facilitate the creation of human capital. That is very important because “building social capital can be a starting point to improving livelihoods” (Lewis 2007:20).

There are two types of social capital that are not necessarily mutually exclusive. Bonding social capital is made up of the connections among individuals or groups with similar background, and bridging social capital is made up of the connections between diverse groups within the community to each other and to groups outside the community (Flora and Flora 2008: 125). The experience from community gardens in Cuba shows how the social networking (both bonding and bridging) surrounding home gardens and the production of food are an essential part in the continuous adaptation to change in order to increase a diverse spectrum of resources and strategies, hence resilience (Buchmann 2009). Bridging social capital alone can create conflicts between the different internal groups through the pressures of external groups seeking power (Bourdieu and Passeron 1977; Bourdieu 1986; Flora and Flora 2008). External domination through clientelism and patronage when there is only strong bridging social capital and little bonding social capital restricts vulnerable groups opportunities to enhance their human, political, financial, and social capitals.

Portes and Sensenbrenner (1993) describe the importance of bounded solidarity and enforceable trust among Latino immigrants, which have both negative and positive consequences in the case of Latino/a gardeners and beginning farmers in Iowa. Latinos often have strong and positive linkages between and within Latino groups, creating family support and benefits through extra-familiar networks (Portes 1998). However, social and physical mobility, change, and the access to other capitals (especially financial and built capitals) depend on the capability to balance internal and external group relationships (bonding and bridging social capitals).

This study is based on the hypotheses that:

1- Social capital is one of the most critical elements among Latino/as gardeners and beginning farmers.

2- Social capital can represent either a positive or negative aspect in their gardening and farming experiences in Iowa.
3- Social relationships among gardeners and with the rest of the community motivate them to participate in gardening and farming programs.

**Cultural capital**

Cultural capital consists of values and worldview. It is transmitted through the socialization process (Flora and Flora 2008). Cultural capital is the way people regard the world surrounding them, which can have material and non-material implications.

In the Latino community gardens in New York City, gardeners organize many cultural events such as birthdays, Christmas, Halloween, weddings, religious activities such as Día de la Cruz, Day of the Death, etc. According to Kransy and Saldivar (2004), the organization of those events in the open spaces provided by the gardens is more important than the agricultural production in the daily use of the land. As was expressed by a staff member of one of those gardens, people want to garden because it gives them a sense of their culture and a sense of strength (Kransy and Saldivar 2004). Lewis (2007) describes how Mexican farmers in Iowa perceive their agricultural activities as reconstructing their cultural backgrounds. Similarly, cultural capital among Latino/a gardeners and beginning farmers in Denison and Marshalltown may have special meanings that need to be explored. I hypothesize that participating in gardening and farming increases cultural capital.

**Political capital**

Political capital represents the power to influence the market, state, civil society, and laws (Flora and Flora 2008). Political capital is low among new immigrants. They are often invisible (in order to protect themselves or family members from deportation) and lack voice in their workplaces and communities. According to Flora and Flora (2008), political capital is fostered by organization and connections. The second generation from immigrant families in places of long-term Latino residency acquires more political tools (such as human capital, social capital, and documentation) than newcomers or the first generation (Dozi and Valdivia 2005).

Collective gardening and farming experiences can provide opportunities for organizing and gaining more political visibility. In Latino community gardens in New York City, gardens are “participatory landscapes” where people take activism as one of the most important elements for their participation in gardening. Community gardens in
this country have been historically used as political instruments to address different social and political agendas (Lawson 2005; Allen 2008).

For Latino immigrants, political capital gained through working together and with outside groups in gardens and on farms can strengthen sustainable livelihoods. This can help overcome their vulnerability in terms of political representation, power, and wage discrimination in rural towns.

I hypothesize that social networking and visibility through growing high quality food and participating in local agricultural enterprises gives immigrant gardeners and farmers more voice in their local community and in the programs designed to serve them.

**Financial capital**

Financial capital includes a variety of financial instruments invested to create additional monetary value. Other community capitals can be used to increase financial capital (Flora and Flora 2008: 18: 175). In Denison and Marshalltown, a great part of the Latino population and six of eight of the gardeners and beginning farmers that participated in this study work in the local meatpacking plants. In recent decades, the meatpacking industry has hired ethnic minorities such as Latinos at a lower wage than American-born workers were previously hired (Fink 1998).

Access to land and capital to purchase inputs and hire labor represent some of the most important barriers for Latino beginning farmers (Lewis 2007). Lewis and Tafoya (2008) found that in Marshalltown and Denison, 97% of women and 81% of men considered access to capital to buy land the greatest barrier to starting farming.

I hypothesize that Latinos who participated in the gardens and farm generated the capital necessary to access land and inputs through other sources than sale of production.

**Built and natural capitals**

Built capital is composed of infrastructure and tools. In the case of community gardens and farms, that includes irrigation systems, tillage equipment, gardening tools and fencing (Flora and Flora 2008).

Natural capital includes soil quality, water quantity and quality, natural and cultivated biodiversity, and landscapes. Ability to garden and farm requires access to and control of both these capitals.
These two capitals represent challenges for the sustainability of community gardens and farming areas around the country. The quantity and quality of land and water available to local residents for agricultural production are critical natural capital access issues. The land available for gardening within urban areas, in towns and their immediate hinterlands depends on historical political contexts, local authorities, and sometimes even on national programs (Lawson 2005; Hou et. al. 2009). As a consequence, one of the biggest problems faced by many community gardens is continuation and long term government support for the use of public land, which is regularly challenged by developers and other private interests. In response to those threats, some gardeners have used resistance strategies. In New York Latino gardeners have had an active role in modifying the landscapes and building “casitas” (small houses) for their regular meetings and celebrations. Today, they “contrast sharply with the more uniform and refined aesthetics of institutionalized landscapes, such as the city parks” (Kransy and Saldivar 2004: 409).

I hypothesize that collective access to natural and built capitals enhances Latino/a gardeners’ and farmers’ ability to produce fruits, vegetables and grains.

Research Methods

A sociological study rests on three interrelated elements: theory, research, and substantive interest of the researcher (Denzin 1989:1). As a consequence of the interconnection between these three elements, the data, the methodology, and the analysis of the results of this study links the community capital framework with the research question/s and the interest of revealing the mechanisms and attributes that facilitate Latino/as farming and gardening in two rural towns of Iowa. This study not only examines the meaning of farming and/or gardening for Latinos (cultural capital), but also identifies specific skills, actions, knowledge, and social responses of the farmer/gardeners and their communities.

Case studies and in-depth interviews

I choose eight of the 28 Latino/a immigrants gardeners and beginning farmers that participated in two different community gardens and in small scale incubator plots in Denison and Marshalltown. I was interested in the different experiences of new participants in those programs and those who had more experience in the community
gardens in Denison and Marshalltown, four from each town. I used purposive sampling to ensure different backgrounds in gardening and farming, different nationalities (Mexico, El Salvador, and Guatemala), different ages (from 32 to 57 years), and male and female gardeners (See Table 1).

For the selection of the gardeners and farmers at the Marshalltown Community College, I requested and received a list with the names and phone numbers of 34 gardeners and beginning farmers from the college. I asked the farm manager for additional information about the Latino gardeners that participated in the community garden (home country, how long they participated in the community garden, age, gender, and if they would be willing to participate). I contacted four gardeners from that list and two of them agreed to participate in this study\(^4\).

From the seven of Latinos enrolled in the course Start Your Own Diversified Farm, I contacted two beginning farmers who I considered had more active and regular participation in the different activities organized. I knew them because I was one of the organizers and interpreters for the course.

From the Denison Community Gardens, M and M Resource Conservation and Development (RC&D) Council in Carroll provided me a list with all the names of the participants (a total of 14). In selecting of the four gardeners, I considered home country, age, gender, and commitment and experience in that community garden, provided by other organizers of that Community Gardens and what I knew about them from my participation as an organizer as well. After I selected the four gardeners, I asked for their participation and they accepted.

\(^4\) I tried to replace the two gardeners that did not accept to participate, calling other Latino gardeners from the list but I could not contact them.
Table 1. Gardeners and beginning farmers interviewed

<table>
<thead>
<tr>
<th>Names</th>
<th>Origin</th>
<th>Gardening and Farming Programs</th>
<th>Time of participation</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscar</td>
<td>Jalisco- Mexico</td>
<td>Start Your Own Diversified Farm- MCC- Marshalltown</td>
<td>1st year</td>
<td>57</td>
<td>Male</td>
</tr>
<tr>
<td>Guillermo</td>
<td>Michoacán- Mexico</td>
<td>Start Your Own Diversified Farm- MCC- Marshalltown</td>
<td>1st year</td>
<td>34</td>
<td>Male</td>
</tr>
<tr>
<td>Pablo</td>
<td>Guanajuato- Mexico</td>
<td>Community Garden- MCC- Marshalltown</td>
<td>4th year</td>
<td>40</td>
<td>Male</td>
</tr>
<tr>
<td>Martín</td>
<td>Guanajuato- Mexico</td>
<td>Community Garden- MCC- Marshalltown</td>
<td>6th year</td>
<td>48</td>
<td>Male</td>
</tr>
<tr>
<td>Lucía</td>
<td>Guachapan - El Salvador</td>
<td>Denison Community Gardens</td>
<td>4th year</td>
<td>32</td>
<td>Female</td>
</tr>
<tr>
<td>Ricardo</td>
<td>Campeche- Mexico</td>
<td>Denison Community Gardens</td>
<td>4th year</td>
<td>36</td>
<td>Male</td>
</tr>
<tr>
<td>Juan</td>
<td>Municipio de Quesada- Guatemala</td>
<td>Denison Community Gardens</td>
<td>1st year</td>
<td>49</td>
<td>Male</td>
</tr>
<tr>
<td>Raúl</td>
<td>Campeche- Mexico</td>
<td>Denison Community Gardens</td>
<td>1st year</td>
<td>40</td>
<td>Male</td>
</tr>
</tbody>
</table>

The cases studies and participant observation provide data for cross-sectional and longitudinal analysis (Neuman 2003), as data were collected before, during, and after the farming seasons of 2008 and 2009. Participant observation allows the investigator to participate as intimately as possible in the experience of the subjects studied (Denzin 1970: 365). I organized meetings for “Scaling to up to Market: Building Capacity among Immigrant Community Gardens” in the gardens and at the Crawford County Extension Office in Denison. I organized classes in the Marshalltown Community College as part of the course Start your Own Diversified Farm, I helped in the gardens, and I visited the gardeners in their homes and gardens. As I gathered my data, I attempted to be part of the diverse processes of farming and gardening in the two communities, and as Denzin (1989) proposes to “be part of the day-to-day experiences” (Denzin 1989: 156). The case studies provided rich descriptions and mutual analyses of fuzzy boundaries of the community gardens which are not only composted by the practices in the gardens but also are part of the gardeners’ daily life in the communities where they live. The meaning,
social interactions, and agricultural knowledge among Latinos transcended the geographical space where gardening and farming were carried out. Gardening and farming experiences are shared by gardeners and farmers with friends, relatives and the rest of the society.

My involvement through multiple visits at different stages in the gardening season and with the different subjects involved in this study provided multiple data points and optics with which to analyze the process of inclusion and its impacts.

I visited the Denison Community Gardens prior to, during, and after the growing season. During the summer and fall of 2008 I visited it two times and in the summer and fall of 2009 I visited the community gardens six times. In the summer of 2009 I organized a focus group with all the gardeners for the evaluation of “Scaling to Up to Market: Building Capacity among Immigrant Community Gardens”. In addition, I had informal conversations with many garden participants during 2008 and 2009, and in the fall of 2009 I carried out the four in-depth interviews with gardeners.

I participated as organizer and interpreter (English to Spanish) in three classes organized for gardeners in the ISU Extension office in Denison and in three meetings with the gardeners in their plots. Moreover, I had the opportunity to visit three of the four case study gardeners in their homes.

In Marshalltown, I visited the community gardens at Marshalltown Community College (MCC) two times during the farming season in 2008 and four times in 2009. In those visits I talked with many of the Anglo and Latino gardeners. In the summer of 2009 I met with one of them in his plot and met with the other gardener in his home where I conducted the interview.

At the beginning of 2009 I participated as organizer and student in the course Start Your Own Diversified Farm in the MCC, where I had a chance to meet all the 17 of students in the farming incubator program. Through that course, I learned more about the Latino participants through many informal conversations. I did participant observation, helping them in their plots, visiting one of them in his home, and participated in different meetings organized by the course. I interviewed the two beginning farmers from that course at their plots and in their homes.

Individuals from the incubator program are part of the beginning farmer course mentioned above, and unlike the rest of the gardeners included in this study who did not
participate in any training program in agriculture, they participated in a course designed for beginning farmers and beginning agricultural entrepreneurs.

My case studies include six community gardeners (Denison and Marshalltown) and two beginning farmers that had been gardeners in the past\(^5\). This differentiation allows us to compare differences or similarities not only in the scale of farming and gardening, but also differences or commonalities that may exist between these Latino/s immigrants that garden and farm through different experiences, goals, and purposes. I recorded all my interviews.

For the analysis of the eight interviews I used the software NVivo. I coded the transcriptions of the eight interviews by: all the community capitals before and during the gardening and farming experience in 2009, the meanings of the gardens, types of crops they used in their countries and in their current gardens, specific agricultural knowledge, food preparation and preservation, demographic data, and barriers and expectations about their future in farming and gardening in Iowa.

I compared my findings with other similar academic works, establishing “face value validity” (Neuman 2003:183) and academic consensus. I explored the connections between the community capitals framework theory and actions and discourses found in the field work.

**Findings and Discussion**

*Human, social, and cultural* capitals were mentioned by all of the participants in this study as the most important elements of their farming and gardening enterprises in these two rural towns of Iowa (See Table 2). Their agricultural knowledge and background, the cultural meanings that gardens have, and the importance of sharing both food and experience were mentioned in all the interviewees as the main motives of their participation in growing vegetables, fruits, legumes, and herbs in their gardens\(^6\).

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\(^5\) Although the interviews were individual, sometimes I included husbands or wives as they were part of the team that participated in the same plot. The information from their partners was registered with field notes and informal conversations with them. In addition, for all of the participants I use pseudonyms to protect the confidentiality of the individuals interviewed.

\(^6\) See the questions about motivation in the interview schedule in the Appendix: Part 2, question c, and Part 4, question a.
Table 2. Numbers of times that the respondents mentioned each of the community capitals during the interviews.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscar</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Guillermo</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pablo</td>
<td>8</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Martin</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Lucia</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Ricardo</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Juan</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Raul</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>58</td>
<td>53</td>
<td>26</td>
<td>15</td>
<td>13</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Cultural, social, and human capitals have a great role in gardening and farming among Latino/a gardeners and beginning farmers, and those capitals can mobilize, transform, and reinforce the rest of the community capitals.

In analyzing the interviews, I found that natural, political, built and financial capitals were not mentioned by the respondents as critical elements in their gardening experience.

Natural, built, and financial capitals

Seven out of the eight gardeners and beginning farmers had gardens in Marshalltown and Denison before 2009. Six out of the eight had home gardens in which they cultivated vegetables and herbs for everyday use including cilantro, peppers, and tomatoes, among others. In addition, two of the eight rented and cultivated land from other Latinos outside of town previous to 2009.

The two beginning farmers started to rent and cultivate land at a larger scale for the first time in 2009 at the Marshalltown Community College because the previous years they used smaller plots in their homes and/or in land rented. The land was rented for US$50 dollars per acre, but they did not pay because they got scholarships from the college that covered the whole amount of the rent. They could get started in larger scale gardening with a relatively small investment (from $500 to $3,000 without counting the labor time). Those expenses included seeds, tools, and transportation. However, they
could not get a positive balance between expenses and income, but they estimated they saved about $700 per household in purchases by growing their own food. Economic factors did not represent an important motivation among seven of the eight participants. Profit was important for only one of the beginning farmers who tried to sell his products but for him financial gain did not represent the most important motivation for farming.

Oscar and his wife Maria sold vegetables in the Des Moines Farmer Market and some stores in Marshalltown and Ames (Iowa). They are aware that they could not earn enough that first year to turn a profit, but they are trying to increase their farm sales and profits based on what they learned from 2009. Even though Oscar knows that he needs to generate profits, that is not his most important motivation for participation in the beginning farming program.

“En nuestra mente no pensamos que nos vamos a hacer ricos de la agricultura pero si pensamos que la gente come más saludable y que es muy lindo trabajar afuera y mirar recoger nuestros productos.”

“In our minds we do not think that we are going to become rich from farming but we think that people eat healthier and that it is very nice to work outside and see our products being harvested.” Oscar

His dream is to live and to farm in the countryside, share and be self-reliant by producing food for his family, and only eventually make some money.

Guillermo and his wife Silvia, the other case-study beginning-farmer household, did not want to sell their products in 2009; they preferred to consume and to share them. However, because they learned from the course Start Your Own Diversified Farm and from the experience of other Latino beginning farmers that marketing their crops could be a viable option, they are analyzing the possibility of selling some of their produce in 2010. The other six gardeners invested in plants, seeds and some tools. On the average, they spent $200 dollars for the whole season, not considering the time and the gas they spent by going to and working at their plots.

For all the Latino/a gardeners and beginning farmers in the sample, the primary return on investment was the high quality and healthy food they obtained from their plots. They raised enough vegetables for their families and even for friends, relatives, and other families. All are aware that they saved money during the production season because of
the vegetables they obtained from the gardens and did not purchase. All felt that their
gardens are very important not only for their domestic budgets, but also for the quality of
their diets.

“Lo importante es que en el verano no compramos nada de la tienda de lo que se
da allá. No gastamos acá en la tienda. De aquí cortamos y de aquí comemos y
sabemos lo que estamos comiendo.”
“The importance is that in the summer we do not buy anything of the things we
obtain there (the garden) in the store. We do not spend in the store. From here we
pick up and from here we eat and we know what we are eating.” Martin

Seven of the eight voiced concern about the applications of chemicals to the soil
they farm. These seven claimed that they prefer food without chemicals and in three cases
(two from the course from beginning farmers) highlighted the importance of the
importance of soil quality and conservation.

“Cuando le echas químicos, el suelo es como un borracho que quiere más y más.”
“When you put chemicals on the soil, it is like a drunk who wants more and
more.” Oscar

The two beginning farmers do not use chemical fertilizers, pesticides, and/or
fungicides, because the land they use is being prepared for organic certification. The two
community gardeners at the Community College use artificial fertilizers, but they would
like to use natural products. The four gardeners in Denison used chemical and/or artificial
fertilizers and pesticides in their plots. However, all of them claim that they know about
(from their experiences in their countries) and would prefer to use natural products like
manure that cannot be easily acquired in these towns.

*Human capital: agricultural knowledge and skills*

Transmission of knowledge about gardening and farming to new generations,
knowledge exchange with other gardeners and farmers, and the enhancement of financial
and natural capitals through education are key elements the gardeners mentioned. The
beginning farmers that participate in the course Start Your Own Diversified Farm
emphasized these points even more often. In that course they learned about organic production and its attributes and market possibilities.

All of the Latino gardeners and beginning small farmers that participated in this study grew up in farms or “ranches” in Mexico, Guatemala, and El Salvador. Those farms combined production of livestock, grains, and some vegetables. One of them came directly from El Salvador to Denison. Seven of eight went to other states in the U.S before they came to Iowa. One of them went from Mexico to Nebraska to work in a meat packing plant. Six went first to California, with half working in agricultural occupations (harvest of grapes and tomatoes, and driving machines), and the others in service (gardening and restaurants), and industries (meat packing). Today, six of the eight work in beef and pork meat packing plants, one is unemployed\(^7\), and the other gardener works in construction.

All of the Latino/a gardeners and beginning small farmers came from agricultural backgrounds from their countries. All of them learned to cultivate a variety of crops when they were between 6 and 14. All the male gardeners started to help their “jefes” (fathers) or grandparents, preparing the soil for planting or cultivating. Martin, one of the gardeners told me:

> “Mi papá me enseñó y eso no se olvida. Lo primero era sembrar cuando estaba empezando le enseñan a uno a tirar el maíz, es que allá uno siembra con yuntas o sea que va el papá adelante tirando la raya y uno va tirando el maíz, fue lo primero que aprendí, sembrando frijol y maíz.”

> “My dad taught me and that is something one never forgets. First thing he taught me was how to plant maize. One plants with a yoke of animals. The father handles the plow and the oxen to make the furrow, and the child follows, putting the corn seeds in the furrow. That was the first thing I learned: planting beans and corn.”

In the case of the Lucia, a female gardener, the learning experience was a little different, because she (as the other Latina gardener told me in Denison) also participated in food preparation and processing.

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\(^7\) His wife works and he gets pay a monthly pension for disability created by his previous work at the local meat packing plant.
“Cuando tenía como 13 o 14 años, ahí aprendimos a cultivar por eso es que lo hacemos aquí, porque uno ya tiene una idea de cómo cultivar. Yo ayudaba a mi papá a echar insecticidas y con el cuidado de las plantas de ahí sale nuestra alimentación, de ahí salía el maíz, nomás lo ponías a cocer y a hacer masa para las tortillas. Los frijoles apenas nos duraban, íbamos a cortarlos, y los cocíamos y ya, a comer…”

“When I was 13 or 14 years old I learned how to cultivate, and that is why we do it here, because we know how to grow things. I helped my dad apply insecticide and care for the plants. That is where we got our food. We grew our own corn; you cook it to make the dough to make tortillas. The beans were gone in no time; we harvested them, and we cooked and ate them on the spot…”

Lucia is the only gardener interviewed who came directly to Denison to join her husband, who was working in the packing plant. All the rest of the gardeners and beginning farmers came to the U.S. at least 15 years ago and did not come directly to the community where they now live. Farming knowledge remained with them from their home and from the rural schools they attended. Juan left Guatemala 33 years ago, but he still remembers how he learned to grow vegetables in his school with other students.

“En la escuela hacíamos grupos de a cuatro estudiantes para ver quien sacaba mayor cosecha al final…Sacábamos tomates, calabazas, y rábanos. Teníamos que ver que tenían los demás grupos pero nosotros teníamos muchos rábanos y con eso hacíamos dinero que era mitad para la escuela y mitad para los cuates.”

“In the school we formed groups of four students to see who could harvest the most …We picked tomatoes, squash, and radishes. We were always anxious to see how much the rest of the groups harvested, but we had lots of radishes which we sold. Half of the money was for the school and half for the kids.”

Among gardeners there are two factors critical to growing vegetables, herbs, and fruits in Iowa. Most of them claim that they learned about agriculture from their countries and presumably retain that knowledge. However, they left their family farms many years ago and sometimes when they were very young. Thus they talk about the tools they used that are not used in Iowa (like plowing with oxen in their home countries). Memory fades
over time, so important details of farming practices learned in childhood may have been forgotten. In addition, latitude and weather are different in Iowa. What can be grown and when it should be planted may be quite different from their experience in their home country. All of my eight cases validated their agricultural knowledge by saying, “Somos del campo” (“We are from the countryside”). However, a great part of the knowledge and skills learned about production of vegetables and fruits, particularly those crops selected for their gardens in Iowa, were not actually learned in their countries at all (See Tables 3 and 4).

Table 3- Vegetables, grains, legumes, herbs, and fruits cultivated at their homes in their countries and in their current gardens in Iowa.\(^8\)

<table>
<thead>
<tr>
<th>Gardeners and origin.</th>
<th>Crops grown in home country.</th>
<th>Vegetables, fruits, legumes, and herbs grown in their Iowa gardens.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin- Guanajuato Mexico</td>
<td>White corn, beans, tomatoes, and peppers.</td>
<td>Cucumber, beans, onions, different kinds of peppers, beets, green tomatoes, and large red tomatoes</td>
</tr>
<tr>
<td>Oscar and María Jalisco-Mexico</td>
<td>Barley, alfalfa, wheat, pears, orange, lime, different kinds of corn, potatoes, and yam bean.</td>
<td>“Poblano”, jalapeño, Joe’s Long Cayenne, and yellow banana peppers (including some seeds from Mexico), onions, yam bean (lost)(^9) four different kinds of squashes (some seeds from Mexico), zucchini, five different kinds of tomatoes, white corn (lost), cilantro, lettuces (lost), cabbage (lost).</td>
</tr>
<tr>
<td>Pablo- Guanajuato</td>
<td>Tomatoes, peppers, white corn, and peanuts.</td>
<td>Beans, peppers, green tomatoes, large red tomatoes, cucumbers, white onions, and sweet potatoes.</td>
</tr>
<tr>
<td>Guillermo and Silvia- Michoacán México</td>
<td>White corn, wheat, beans, and sorghum.</td>
<td>Two different kinds of tomatoes, cilantro, chickpea (seeds from Mexico), white corn, beans, watermelon, squashes, bell (for first time) and Santa Fe Grande peppers.</td>
</tr>
<tr>
<td>Ricardo- Campeche México</td>
<td>White corn, peppers, tomatoes, beans, radish, and cilantro.</td>
<td>Two different kinds of tomatoes, onions, potatoes, cucumbers, and watermelons (lost).</td>
</tr>
<tr>
<td>Raul- Jalisco, México</td>
<td>White corn, beans, squash, cucumber, sorghum, and chickpea.</td>
<td>Tomatoes, cucumber, Santa Fe Grande and Joe’s Long Cayenne pepper, cilantro, radish, squash, and onions.</td>
</tr>
<tr>
<td>Juan- Municipio de Quesada- Guatemala</td>
<td>White corn and beans.</td>
<td>Cabbage, cauliflower, onions, two different kinds of tomatoes, watermelon, and melons.</td>
</tr>
</tbody>
</table>

\(^8\) Some of the vegetables and legumes are written as gardeners mentioned because it was impossible to check with all of them to corroborate the actual names.

\(^9\) Lost means that that crop did not grow and died during that farming season.
Many of the vegetables, legumes, herbs, and fruits that Latino/as grow in Iowa were neither grown in their countries nor known to them prior to their coming to the U.S. They learned about the plants they now grow through practical experience in the U.S., particularly in Iowa. They also learned in Iowa the care those different species and varieties require. All of the gardeners learned about the tools or techniques they had to use by observing other Iowa gardeners. Much of their practical knowledge was learned in the U.S. through their own experiences or from observing other Latino gardeners. Four of the Latino/as of the eight in the study migrated from their countries directly to California and worked on farms. They engaged in very specific agricultural tasks that did not take the product from seed to harvest, as industrial workers as per Marx’s (1987) description of industrialized production. Industrial workers generally only know very specific skill, not the whole process of production. Three of the eight gardeners pointed out that they learned aspects of growing some varieties of vegetables and fruits in California, but that did not mean that they participated in the whole biological farming cycle. That learning experience only included to specific agricultural tasks, many times not directly related to horticulture. In two of these cases they grew certain vegetables (tomatillos and peppers) in their backyard gardens in California, where they did participate in the entire cycle.

Besides the knowledge they brought from their countries and the experiences they gained from farm work in U.S, the great part of their skills and knowledge about growing vegetables, herbs, and fruits were acquired from experiences with home gardens they had (all of them in the towns where they live now and two also in places they lived before). Four out of the eight gardeners also indicated learning from friends who garden in Iowa.

All the gardeners and beginning farmers were asked about where they learned about the different tasks required by gardening and farming (See Table 4). When I asked general questions about their agricultural background, they answered that they learned in their countries. But focusing on specific steps required in cultivating vegetables, legumes, fruits, and herbs in their plots, we can see that great part of that knowledge has been acquired in the U.S. from previous experiences with gardens, especially in their own back yards, and from other Latino/a gardeners.10

10 With the exception of Juan who mentioned that all the things he knew about gardening he had learned in Guatemala. However, his current community garden plot represented his first year of gardening in the U.S. (See Table 4).
Table 4. Knowledge about different agricultural practices and skills, food process and places where gardeners and beginning farmers learned them.

**Abbreviations:** California CA, Iowa IA, Mexico MEX, Guatemala GT, El Salvador SV.

<table>
<thead>
<tr>
<th>Types of knowledge and/or skills</th>
<th>Martin</th>
<th>Oscar &amp; María</th>
<th>Lucia &amp; Pedro</th>
<th>Pablo</th>
<th>Guillermo &amp; Silvia</th>
<th>Ricardo</th>
<th>Raul</th>
<th>Juan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting and saving seeds</td>
<td>CA &amp; MEX</td>
<td>MEX &amp; IA</td>
<td>SV</td>
<td>MEX &amp; IA</td>
<td>CA &amp; IA</td>
<td>IA</td>
<td>MEX</td>
<td>GT</td>
</tr>
<tr>
<td>Planting and soil preparation</td>
<td>In previous gardens, IA</td>
<td>MEX, CA &amp; IA</td>
<td>SV</td>
<td>Television U.S.</td>
<td>MEX, CA &amp; IA</td>
<td>MEX</td>
<td>Sioux City, IA</td>
<td>GT</td>
</tr>
<tr>
<td>Fertilizers, pesticides, and fungicides (natural and chemical)</td>
<td>In his garden, IA</td>
<td>MEX (natural) &amp; IA (chemical)</td>
<td>In their garden, IA</td>
<td>MEX &amp; IA (natural) &amp; IA (chemical)</td>
<td>MEX &amp; IA (natural) &amp; IA (chemical)</td>
<td>MEX</td>
<td>Sioux City</td>
<td>GT</td>
</tr>
<tr>
<td>Watering/irrigation</td>
<td>MEX</td>
<td>MEX</td>
<td>IA</td>
<td>MEX</td>
<td>MEX</td>
<td>MEX</td>
<td>GT</td>
<td></td>
</tr>
<tr>
<td>Equipment and tools for farming</td>
<td>MEX &amp; IA</td>
<td>IA</td>
<td>SV</td>
<td>MEX &amp; IA</td>
<td>CA</td>
<td>MEX</td>
<td>MEX</td>
<td>GT</td>
</tr>
<tr>
<td>When and how to harvest</td>
<td>In the garden, IA</td>
<td>MEX &amp; IA</td>
<td>SV</td>
<td>MEX &amp; IA</td>
<td>MEX, CA &amp; IA</td>
<td>MEX &amp; IA</td>
<td>MEX</td>
<td>GT</td>
</tr>
<tr>
<td>Marketing and/or preserving food</td>
<td>Drying from MEX &amp; other IA gardeners</td>
<td>Drying, freezing, canning, &amp; marketing, MEX &amp; IA</td>
<td>Drying and canning from SV</td>
<td>Drying &amp; freezing from IA gardeners</td>
<td>Drying &amp; freezing from friends &amp; course in MCC, IA</td>
<td>Drying &amp; freezing from other gardeners in IA</td>
<td>His wife: Drying &amp; canning, MEX &amp; IA gardeners</td>
<td>Freezing from GT</td>
</tr>
</tbody>
</table>

Selecting, planting, and saving seeds are techniques learned in their countries. However, many of the gardeners bought the plants from supermarkets or other stores. Some grew from seed varieties they knew from their countries or previous experiences. Four out of the eight started the seeds at home, in basements, in garages, or in the Marshalltown Community College green house during the spring. Two of the four also used improvised greenhouses at home. Germinating the seeds at home was learned in Iowa, since most came from countries and regions with less pronounced seasons in terms of temperature variation. Many of the tasks of gardening required adaptation of their knowledge to seasonality and weather conditions in Iowa.
Many of the seeds that gardeners used were obtained from friends or relatives, especially those that they could not easily get in local stores, such as white corn, peppers, or particular varieties of tomatoes and squashes.

The most critical aspects of the gardening and farming process among Latino/as in Iowa are the lack of access to manure or compost or even what kind of nutrients they should use. They also lack knowledge about organic pesticides and in general how to control pests, fungus, and insects. All of the gardeners and beginning farmers knew about the application of natural fertilizers in their countries. This knowledge sometimes came from an indigenous cultural heritage, as in the use of bat manure. In Iowa they had to buy fertilizers and chemical pesticides in the local stores and supermarket. As they do not know much about those products, they asked other gardeners for advice. However, all of the gardeners and beginning farmers, especially the two that attended the course for beginning farmers, were aware of the benefits that natural and organic production can have not only for the environment, but also for their diets and health. Organic production is one of the most important aspects in the content of the beginning farmers’ course. The gardeners’ preference for natural products rather than chemicals is due to the experience they had in their countries with natural agricultural inputs and the cultural importance of high quality and fresh food.

As Lawson (2005) points out, gardens have historically been spaces with great educational possibilities. Most of the gardeners in this study learned from the experiences of other gardeners in the U.S. about new varieties, pesticides, fertilizers, and how to cook or preserve their products. Knowledge exchange is also reflected in the varieties selected each year because of the advice and comments received form other gardeners and cooks. The exchange of varieties and recipes creates a rich multicultural environment, where they try vegetables and recipes from other Latin American countries before unknown to many of them. This knowledge exchange even overcomes the languages barriers between Latino and Anglo gardeners.  

The gardens also allow the children of the gardeners and beginning farmers to learn about nature, agriculture, and related values. All the gardeners are joined by their children at various times in the farming season. Children enjoy the activity and learn from their parents. Human capital can be reinforced more strongly if there are educational tools

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11 Notes from the field work. Conversation at the Denison community gardens with Dough the only Anglo gardener and Raul.
especially for children related to agriculture. That has been the case of the course for beginning farmers at MCC where children enjoyed having “agricultural activities” designed especially for them.

For the two beginning farmers in the study, the course Start Your Own Diversified Farm helped them increase production, strengthen their consciousness about organic production, learn farming techniques in Iowa from both instructors and farmers, acquire tools and practical experiences, bilingual instruction (Spanish and English), and interact with members of the different communities of Anglos and Latinos\(^\text{12}\). However, it is premature to measure the success of that course among the beginning farmers of this study, considering that 2009 was their first year of operation.

In relation to the hypotheses, my findings about human capital confirm that:

1. Latino/a gardeners and beginning farmers have an agricultural background (initial human capital) acquired from both their home countries and the U.S. The specific knowledge about gardening and horticulture was mostly obtained from previous gardening experiences in the U.S., particularly in Iowa and/or from other gardeners.

2. Gardening and farming among Latinos serve to transmit agricultural and food knowledge (increase human capital) to new generations, relatives, friends, and other gardeners (both Anglos and Latinos).

3. Based on the experience of these Latino/a gardeners and farmers, human capital and its strength can mobilize financial, natural, built, cultural, and social capitals.

\textit{Gardening, farming and building social capital.}

In the case of gardeners and beginning farmers of Denison and Marshalltown, social networks that are formed around the production and sharing of fruits, vegetables, and herbs transforms other community capitals.

Gardens provide spaces for developing social relationships. Participants gather together with their families and friends, reinforcing bonding social capital by sharing the experience of gardening and farming and the products harvested. All eight of the farmers learned of the community gardens and the land available at the incubator farm from relatives, friends, and other Latino/a gardeners. Gardening and farming are topics that

\(^{12}\) Notes from the field work during the class Start Your Own Diversified Farm, March 2009.
reveal and reinforce common interests and motivations among Latino immigrants. All eight gardeners reported exchanging experiences about the last year’s growing season and sharing vegetable and fruit seeds along with recommendations about germination, weather in Iowa, the care the different plants need, and how to cook or preserve different vegetables after harvest.

During the farming seasons, gardens became places where all members of the gardeners’ families could come to help and/or to socialize and interact with relatives, friends and other gardeners. In Denison, the community gardens take a special social meaning because they are located next to the soccer fields where a great part of the Latino community goes every weekend during the summer. As Harvey (1973) points out, space plays a distinctive role in both the organization of production and the patterning of social interaction. The location of the community garden in Denison is of great importance, because people attending the soccer games can see and visit the gardens. The space is socially and culturally revitalized by everyday social practices.

In these two towns there is little interaction between the Latino and the Anglo community, creating two parallel worlds: the Anglo and the Latino. However, the experience of the gardeners show how interaction can be increased through agriculture and the informal food networks established between these two communities (bridging social capital). All of the gardeners and one of the beginning farmers told me how they share vegetables and fruits with workmates at their jobs, whether Latinos or Anglos.

“Mira como esos chiles, yo me llevo bolsas para el trabajo y ahí en el trabajo saco mis chiles y si hay gente que me dice ¿me das un chile?, yo les digo, y sí hombre, agarra los que quieras. Si, a diario tengo mi bolsita con chiles, o mira esos tomatillos, vino mucha gente y se llevó…”

“See with chilies, I take bags to work and there I take out my chilies and if people ask me, “Will you give me one?” I say, “Yes man, take what you want”. Yes, every day I have my bag with my chilies or other produce. Look at those tomatillos! Many people came and took them…” Pablo

The gardeners and beginning farmers not only share their products with fellow workers, with relatives and friends, but also with institutions that support low income families or poor people and churches. Directly or indirectly, many people in the
communities are fed by the products harvested in the small plots at the community gardens or in the incubator farm and consequently benefit from fresh and healthy food.

Lucia makes “papusas” (a traditional meal from El Salvador) in the local Baptist Church. Most of the tomatoes and beans that she and Pedro (her husband) harvest from the small plot they cultivate are used in the celebrations the church organizes to raise money for a new building. The social networks established are transformed into collective financial capital through food. Lucia and his husband are currently trying to open a restaurant in the town, and the garden would eventually become even more important as a financial resource.

However, social capital does not always reinforce financial capital. There were classes about planting, pests, and how to sell in the Farmer Market. In Denison those classes were bilingual and organized by Iowa State University Extension and the M and M Resource Conservation and Development Council (M&M Divide RC&D) in Carroll. Although most of the gardeners had indicated interest in those classes, only a few attended, and none of them wanted to sell products in the local Farmer Market. The classes were held in the ISU Extension Office. The Latino farmers and gardeners told the evaluator that they did not feel comfortable going where the predominant language is English. Extension is seen by the gardeners as place for long term residents rather than newcomers (Emery et. al. 2009). As Flora and Flora (2008) point out, high bonding social capital combined with low bridging social capital reduces access to information and other resources from the outside. In these situations, groups do not trust each other and are reluctant to cooperate with one another (Flora and Flora 2008). The evaluation of the project “Scaling to up to Market: Building Capacity among Immigrant Community Gardens” in Denison Community Gardens found that the lack of trust diminished gardeners’ access to formal institutions for education or marketing in the local Farmer Market (Emery et. al. 2009). High bonding social capital and low bridging social capital not only limited access to more opportunities, but also limited the individual aspirations of those gardeners that had previously indicated interest in selling at Farmers Markets. However, there are other elements that may have influenced the marketing interests the gardeners had shown at the beginning of that project: their social and cultural motivations for sharing rather than selling vegetables, the manner by they were asked and informed.

Notes from the field work. Meeting with the gardeners at the Denison Community Gardens.
about marketing aspirations and opportunities, the sizes of the plots, the amounts of production, and time availability.

Latino/as participating in the course for beginning farmers at Marshalltown Community College expanded their social networks. Participants mentioned the importance of establishing new relationships with both Latinos and Anglos (bridging social capital). The construction of new social networks allowed access to certified organic land (natural capital), markets (financial capital), infrastructure for farming (built capital), education and knowledge about gardening (human capital), and more active participation in community institutions (political capital). Educational spaces designed for both Anglos and Latinos (human and social capitals) like Start Your Own Diversified Farm facilitate cultural exchange about agricultural techniques and meanings (cultural capital). The Latinos and the Anglos learned they shared values around the importance of fresh food, the meaning of being a gardener or farmer, and eventually the importance of being an agricultural entrepreneur. They also shared particular skills on cooking and canning their produce.

The results of this study confirm that:

1- Social capital is one of the most important community capitals among Latino/a gardeners and beginning farmers and this capital can mobilize other capitals.

2- Social relationships can represent either a positive or negative aspect in their gardening and farming experiences in Iowa and in their access to other community capitals.

3- Social relationships among Latino/a gardeners and with the rest of the community not only motivate them to participate in gardening and farming programs but also provide new opportunities for social integration and inclusion through sharing food and agricultural experiences.

Cultural meanings

Among Latino/a gardeners and beginning farmers, cultural capital has an invisible role and is embodied in their motivations rooted in their “agri-cultural” background. Among these gardeners cultural capital includes the meaning rooted in farming culture, sharing, the re-validation of life in the countryside, food identity, and the use of public spaces.
Gardens for Latinos in Iowa re-signify life in the countryside and the cultural importance of being outside and in contact with nature. Gardens are spaces where Latinos that come from rural parts of their countries feel that they are not so far from the lands where they grew up, as they rebuild similar natural environments with different varieties of fruits, vegetables, and herbs. Gardens are more than recreational places or even more than the produce they generate; they are “un pedacito del campo”; a little piece of the countryside.

“A mí me gusta mucho recordar a mi pueblo (...) es muy bonito ver crecer las plantas. Yo sembraba una milpa aquí e iba todos los días a ver si había germinado, todos los días (...) con eso nace uno, que le gusta a uno, y eso nunca se olvida. Eso nunca se olvida uno (...) de donde uno nació, lo que uno sabe, lo que uno lo hizo vivir. A mí me gusta mucho el campo.”

“I like to remember my hometown (...) it is very pretty to see how the plants grow. I planted my corn here, and I went every day to see if it had germinated, every day (...) you are born with that, it is what you love, and you never forget where you were born. It is what you know and what you do to live. I love the countryside a lot.” Martin

“Es algo que me gusta mucho, Diego. Es algo que no quisiera perderlo yo. Es como una tradición o como un pasatiempo. Porque nosotros traemos el monte y el campo en la sangre yo creo, uno no lo puede dejar.”

“It is something that I really like, Diego. It is something that I do not want to lose. It is like a tradition or like a hobby. Because we have the forest and the countryside in our blood I think, I cannot get along without it.” Ricardo

Gardeners reconstruct not only the built and natural capital of their past, but also the meaning of gardening, farming, and being outside in a rural town in Iowa. These towns do not have many public spaces where people can go to relax, to be outside interacting with others, so gardeners have created their own public spaces in the community gardens. That space is shared with relatives, friends, and people that are interested in enjoying the same things the gardeners enjoy. Silvia, wife of one of the beginning farmers told me:
“Por lo que yo me decidí a plantar aquí porque yo tengo un niño que es muy travieso, tú lo conocés (...) como a él no le gusta estar quieto en un mismo lugar por lo que nos decidimos a plantar fue principalmente por él (...) y yo decidí si vamos a plantar allá vamos a estar ocupados (...) y pues este año fue una bonita experiencia porque cada rato estando en la casa el nos decía: “vamos al colegio a ver las plantitas o las semillas también.”

“The reason I decided to plant here was that I have a son that is very mischievous, you know him (...) because he does not like to stand still, to remain in the same place. It was for him that we decided to plant a garden there to keep us very busy. It was a wonderful experience this year because when we were at home, he kept saying “Let’s go to the college to see the plants and the seeds.”” Silvia

As in other summers, in 2009 one of the Juan’s cousins brought his parents from Guatemala. They spent the entire summer with their family in Denison. When they learned that Juan had a garden, they asked to join him in one of his visits to the garden. After the first visit they went to the garden every afternoon, they controlled the weeds, they harvested, they prepared vegetables, but fundamentally they enjoyed and recreated the act of gardening and farming, reliving their perception of being in the countryside.

The experience of gardening and farming is shared not only through the produce, but also through practical experiences, such as going to the field and working the land. This sharing is part of their cultural background. Most of them said that they share more than half of what they grow in their gardens. When I asked about the importance of their gardens for their lives, all eight mentioned that to share the produce with friends, relatives and other people was one of their main motivations.

“La papa la regalé toda a mis hermanos, Diego. A mi papá nunca le gustó vender las cosas. Mejor si va un amigo o pasa un amigo mejor. Se las regalas en México, él nunca anduvo vendiendo sandías. La gente que llegaba él les daba las sandías, quien sabe porque esa costumbre que tiene él, y a lo mejor es porque la tenemos...”

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14 Notes from the field work.
”

“I shared all the potatoes with my brothers, Diego. My dad never liked to sell things; for him it was better to give things as presents to friends. In Mexico, he never went around selling watermelons. When people came to visit, he gave them watermelons. Who knows why he had that habit? And more than likely that is why we share this value -- I don’t like to sell my produce, either. If I see a friend, I will give it away to him.” Ricardo

Sharing is not only based on the gardeners’ cultural background, but also on the social recognition they gain in the local community as someone who gives to others and works hard. Cultural capital is not only reinforced by the fact of sharing the experience and produce, but sharing also reinforces natural, financial, social, and political capitals. The cultural image of “I am still a “campesino” (country person) builds both bonding and bridging capitals, and one gains social prestige with both the Latino and the Anglo community in these two rural towns. That is reflected in the positive feedback that they receive from the people that consume the produce from the gardens. All eight of the gardeners and beginning farmers point out that recognition and appreciation of what they do generally is only valued by some people inside the Latino community and not by many in the rest of the society. That contrasts with the comments from the people with whom they share their produce, who usually ask them to grow them again next year, or, amazed, ask where or how they grew that chili or tomatillo. Consequently, gardeners are proud of their work and their produce. That cultural and social recognition serves to motivate their persistence in gardening and farming. In addition, the image of gardening and farming transmits stability, health, and membership to the community.

Culturally, Latinos value the quality of the food that gardener’s families and others get from the plots. Specific varieties for traditional recipes that otherwise would be difficult to get and the flavor of the fresh vegetables and other products are particularly appreciated by the recipients of this gift of garden produce. Cultural capital strengthens natural capital and that is valued by the eaters of their garden produce.

“Comer fresco esa es la importancia, porque a mis hijos casi no les gustan las cebollas, pero cuando son de aquí, y cuando hago una carne asada, tengo que
echar veinte o treinta cebollas porque no me van a alcanzar, todos comen cebollas, pero si una cebolla así de la tienda no la comen.”

“To eat fresh things is important. My children generally do not like onions, but when they are from here, and when I barbeque meat, I have to put on twenty or thirty onions because they are not going to be enough -- everybody eats onions, but they will not eat an onion from the store.” Raul

Because farming and eating fresh food is an essential part of the Latino immigrant culture, the fact that they can have this experience in these rural towns enriches other capitals and consequently the whole society.

**Conclusions**

This study confirms that Latino/a gardeners and beginning farmers have an agricultural background and knowledge (*human capital*) from both their home countries and from other parts of the U.S. that has enriched their gardening and farming experiences. That knowledge of gardening and farming is important in transmitting agricultural and food knowledge to others and in the mobilization of other community capitals.

Specifically, human capital strengthens *social capital*, which is one of the most critical elements among Latino/as gardeners and beginning farmers. Social capital not only motivate gardeners and beginning farmers to cultivate but also to build bridging and bonding social capital (through sharing the experience and the produce) in these towns, establishing new and stronger relationships within and outside the Latino community. That allows more egalitarian cross cultural contact and enhances cultural knowledge exchange between Anglos and Latinos.

Among the participants of this study *cultural capital* is one of the most important motivations for gardening and farming. Cultural capital has a special meaning rooted in cultural tradition and identity of a “countryperson”. That identity leads to new social relationships, which are reinforced by sharing the produce and experiences with gardening and food, and being outside with family and friends.

My hypotheses about *political capital* explored the relation between participation in organized gardening and farming activities and expanded political representation, power and visibility. This study shows that political capital is still lacked among its
participants. Social networking and visibility through growing high quality food and participating in local agricultural enterprises did not have a political impact on either the programs or the local communities. However, participation in educational spaces may represent opportunities for Latino representation and active participation in issues regarding the whole community. This is a critical capital that needs to be developed for the future of sustainable gardening and farming projects in rural towns with immigrant newcomers in the U.S., but may be difficult as long as the immigration system itself makes it dangerous to call attention to oneself through organizing.

My hypothesis about financial capital was that gardeners and beginning farmers were motivated to sell some of their products but financial gain was not the primary motivation for participation in the projects. However, 7 out of 8 did not want to sell their products and economic profits from gardening and farming was not the major motivation. Gardeners and beginning farmers save money by not purchasing vegetables, fruits, legumes, and herbs that they grow themselves.

I hypothesized that natural and built capitals could be mobilized by other community capitals. Latino/a gardeners and beginning farmers enhanced their access to these capitals by mobilizing social, cultural, and human capitals.

Human, social, and cultural capitals are the capitals that most benefit Latino/a gardeners and beginning farmers in Iowa. Human and cultural capital would appear to enhance social capital. All three capitals facilitate access to other capitals. Although Latino immigrants bring experience in diversified agriculture and an appreciation of local, fresh food they need assistance focused on practices of horticultural and agricultural production that are specific to the geographical and geological context of the region in which they currently live. Strengthening of human capital through the use of appropriate educational tools for this population can considerably improve their gardening success, because in this country they find many natural, economic, and cultural challenges that need to be solved with new knowledge and new skills. Bilingual courses for Latino or other immigrant gardeners or beginning farmers can offer opportunities not only in terms of knowledge of production, but also in terms of social networking, sustainable practices, and financial opportunities. However, those courses and incubator programs need to incorporate creative elements for the inclusion of Latinos/as, establishing social networks based on trust and reciprocity that link them to the community and local institutions. The focus on giving away rather than selling the produce by the Latinos is in sharp contrast to
the focus on selling and profit of those offering the training. The validity of sharing as an end in itself must be recognized by the Anglo institutions organizing the courses.

Spaces provided by learning and gardening allow the transmission of advice and support for healthier agricultural practices, appreciation of fresh and organic products and practices, and channels to access natural capital and high quality agricultural inputs such as natural fertilizers or pesticides. Human capital, enhanced by education can facilitate access to financial opportunities such as selling and marketing their produce. However, for all except one of the eight cases, financial gain was not one a major motivator for increasing their gardening skills. Enterprises need to be based on the cultural meanings that gardening and farming have for the Latino community. Recognition that sharing produce is a worthy goal enhances the flexibility and openness of Latino/as. The reciprocity that sharing entails enhances knowledge exchange, commitment, trust, and cultural integration.

The different community capitals can be positively influenced among them. A spiral and diagram can illustrate how these capitals are connected and can be mobilized for sustainable projects or enterprises that include Latino/as in agricultural and local food systems efforts (See Figure 1) in this country.
Political Capital- This is an essential capital for inclusion and social equity. The empowerment of political capital, involvement, active participation, and civic engagement in the decision making by Latino/as gardeners and beginning farmers, depends on the rest of the community capitals and how well they are positively affected or mobilized by the whole community where they live and cultivate.

Financial capital- Today, it is not one of the major motivations among the participants of this study. However, its consolidation may take time and if it is mobilized can create new economic opportunities for the Latino/a gardeners and farmers and their families. If cultural, human, natural, built, and social capitals are empowered, and gardeners, beginning farmers, and stakeholders, share similar goals about economic possibilities about farming and selling in the local markets, financial capital can be consolidated in a long-term.

Natural and built capitals- These capitals will be strengthened through the educational, institutional, and long-term community support. This study shows that Latino/a gardeners and beginning farmers know about natural fertilizers but they need access to them in Iowa. They also need: spaces for social recreation, good quality land, infrastructure, equipment, and other natural agricultural inputs.

Social Capital- Social networking facilitates the access to the rest of the community capitals. Sharing the produce and the gardening and/or farming experiences can overcome cultural barriers and allow the access to healthy food, agricultural knowledge exchange, and social integration and justice.

Cultural Capital- Cultural comprehension is a key element in sustainable agriculture and local food systems efforts focused on the inclusion of the Latino communities. It can be mobilized through social relationships and spirit of commitment and mutual collaboration of the different communities involved. The cultural meanings that Latino/as immigrants have around food, agriculture identity, and sharing the produce can potentially enrich the current agriculture and food systems in the U.S.

Human Capital- Latino/a gardeners and beginning farmers have an important agricultural background from both their home countries and from other parts of the U.S. That knowledge needs to be strengthened through external resources and educational instruction about how to practice agriculture in regions like Iowa. In addition, gardening and farming have an important role in transmitting agricultural and food knowledge and in the mobilization of other community capitals as well.

Figure 1. Spiraling up (Modified from Gutierrez 2005 and Emery 2010).
Future studies should explore the interaction between the institutions that organize and support Latino/as gardeners and beginning farmers and the participants themselves. That will provide more insights about how integration can be achieved in both rural towns and/or in urban areas of the U.S., through sustainable “agri-cultures” and high quality food.
Chapter 3. General Conclusions

General Discussion

*Human, social and cultural capitals* facilitate successful Latino/as gardeners and farmers in Iowa, however they define that success. These three capitals can mobilize and transform the rest of the community capitals and consequently can allow access to land, sustainable agricultural practices, and eventually participation in the local markets. Human capital among Latino immigrants represents a potential for diversified agriculture and local food systems in this country and particularly in the state of Iowa, but that has to be supported by educational programs and access to land for gardens and small farms.

Bonding social capital is very strong within these Latino communities, and bridging social capital is limited by cultural barriers, such as language but increased through sharing their produce.

Although much of the literature about community gardens and participation of immigrants focus on social and historical processes, cultural traditions and adaptations by immigrant groups, the meaning of gardens, cultural expression, manifestations of urban activism, social capital, and planning (Lawson 2005; Glover 2004; Aponte-Pares 1996; Kransy and Saldívar 2004; Ogawa 2009; Hou et.al. 2009), these studies do not explore the potential that sharing the produce and the experience can have in the social interaction between Latino immigrants and long-term residents. This study shows how gardening and fresh food can create bridging social capital to overcome the cultural barriers and establish rich relationships and cultural exchange between different ethnic groups. Cultivating gardens in community setting and sharing their produce provide an important opportunity for egalitarian cross cultural contact in these rural communities. The cultural meaning of gardening and farming based on re-capturing the meaning of being on a “rancho” (farm) or being in the countryside has an enormous potential for the improvement of their lives and strengthening of the community. The new urban and rural spaces are created for farming and gardening contribute to social interaction, recreation, and greener landscapes. The location of Latino gardens is very important, because if they are in a visible place and next to other spaces that are important for the Latino and the Anglo communities (building bridging and bonding social capital and reinforcing built and natural capital) they provide additional spaces for informal intercultural interaction. Rural towns and cities can co-locate gardens and sports fields in their development plans,
situating social and cultural spaces for interaction and exchange between different ethnic groups.

Cultural capital is a key element in gardening, as it values sharing of produce, knowledge and food individually and through institutions over profit seeking and marketing. Recognizing the community impacts of sharing the cluster of skills and meaning associated with gardening for Latinos can build bridges to the Anglos community as well.

Latinos bring to Iowa a diversity of agricultural knowledge and skills. However, practical knowledge gained in other ecosystems cannot be automatically applied in Iowa ecosystems. Agriculture and gardening are extremely contextual, and the mutual discovery that community gardens facilitate is critical to successful production and consumption. Gardeners and farmers need to adapt their practices to the Iowa rainfall, soil and temperature regimes. And new varieties of vegetables, fruits, legumes, and herbs require experiential learning and the sharing of tacit knowledge with other gardeners and farmers. Iowa seasonality and weather conditions represent contextual challenges for agricultural enterprises in Iowa. The risks of the new ecosystem are mitigated by knowledge exchanges with other gardeners in Iowa, and in the case of beginning farmers, by the course taken at the local community college.

The social networks established within the Latino community and with some Anglos around gardening, farming, and food, and the reinforcement of human capital through practical experiences and educational programs reduces risk and enhances the probability of success during the growing season. Knowledge exchange among Latino/a gardeners cover different steps of production planning, planting, weed and pest control, and post-harvest processing of the produce such as drying and canning. Building knowledge about gardening and farming (human capital) through bonding social capital does not provide all the knowledge that these pioneers need for their agricultural enterprises in Iowa.

Bridging social capital and the creation of new social relationships plays an essential role in the access to new knowledge and institutional support. Bridging social capital and the enhancement of human capital can minimize the cultural differences between Anglos and Latinos in Iowa by building commonality around growing and preparing good food that is shared. Strengthening bridging social capital can facilitate access to new financial opportunities, but it must be recognized that for both Anglos and
Latino gardeners, sharing may be more important than selling. The culture of “ser campesino” (being from the countryside), the strong social networks among Latino/a gardeners, and the cultural meaning of fresh food are important elements that need to be respected and can be capitalized on to realize their potential for affecting the future of American agricultural and food systems.

**Recommendations**

Latino/a gardeners and beginning farmers need resources from outside the Latino community. Those resources can come through the interaction with long-term gardeners and/or farmers in Iowa and with educational institutions. Those resources can be provided by educational programs such as the course Start Your Own Diversified Farm carried out in Marshalltown Community College. Courses developed to include Latinos/as can facilitate access to new and useful knowledge about not only how to farm in a specific Iowa ecosystem (human capital), but also can provide social spaces for the inclusion of immigrants interested in farming or gardening in Iowa. Access to educational spaces can generate bridging social capital between newcomers and long-term residents. Thus, enhancement of human capital can transform other capitals.

These are some of the elements that have to be considered in constructing future educational spaces, including Extension efforts, or other sustainable agriculture and local food programs that work with Latino beginning farmers and/or gardeners. The content of the education/training needs to recognize the educational and agricultural experience that Latinos/as bring from their home countries and to take into account motivations and aspirations they have for engaging in farming and gardening.

- The purposes of those spaces need to be based on the cultural meanings that gardening, farming and food have for the participants.
- Learning skills need to be flexible, inclusive, creative, and practical, focused on production and how to improve their crops. This should involve including experienced local farmers as instructors and the active participation of the gardeners and beginning farmers in their own education.
- Classes or instructions should be bilingual (Spanish and English) with interpretation provided, depending on the languages skills of the participants.
Gardeners and beginning farmers need access to land and instruction regarding natural agricultural inputs such as composting, manure application, pesticide options, etc.

Gardeners and beginning farmers need assistance and instruction in all processes that gardening and farming require.

The social importance of Latino/a gardeners and beginning farmers sharing the produce from their gardens over making profit, as is the case for many Anglo gardeners and farmers. The reciprocity involved in sharing is enhanced through festivals, social events, gatherings, and even soccer games. Educational programs or institutions that include Latino/a gardeners and farmers can capitalize those activities and work with the Anglo community to include those events as relevant for the whole society.

Educational spaces, incubator programs and local food movements need to develop more leadership among the Latino/a gardeners and farmers. Emery (2010) points out that developing local food systems in Marshalltown that include Latino beginning farmers involves four related missions: “getting Latino/immigrant farmers access to land and resources, supporting a local/regional food system with equitable Latino participation, fostering an inclusive, diverse and participatory community, and developing a model for others to use” (Emery 2010:16). Emery (2010) also points out that in order to succeed in that goal, it is important to involve Latinos/as in decision making and eventually create common visions for the future with other actors involved in these enterprises. However, shared visions among all the actors only can be achieved through the cultural and social comprehension among all the actors involved. That may require capacity-building around topics such as social equality and social justice. These are some of the elements that these capacity-building spaces have to consider:

- To think long-term in Latino ownership, working with a group and not for a group (Emery 2010).
- To think about the mechanisms by which Latino leaders can be engaged in the planning and implementation of farming and local food systems efforts in these rural areas.
- To learn about Latin-American cultures regarding agriculture and food.
- To create awareness of the differential political power that Anglos and Latino immigrants currently have in rural communities.
To think about food and agriculture as potential and powerful tools for social integration and justice in rural America.

Informal social networks around local food and farming can serve as channels of inclusion and cultural understanding. Social and cultural capitals are essential elements in the construction of trust and strong links between different communities. The evaluation of the community garden project in Denison points out that social capital links established between the Latino community and the institutional organizers built trust between the two groups (Emery et. al. 2009). However, we must be aware that the achievements of these objectives may require long-term efforts.

Latino/a gardeners or farmers need to be actively represented among stakeholders. The two communities (Anglos and Latinos) need to develop sustainable mechanisms of inclusion of Latino/as gardeners and/or farmers in the local agricultural system and local food markets, through institutional commitment from both communities. The construction of sustainable institutional frameworks needs to be based on the inclusion of Latino/as representation in those enterprises. Sustainable agriculture and local food movements have to consider:

- The mechanisms by which the Latino community can be informed about gardening, farming and/or food market opportunities.
- To “bring the two pictures in the mirror together” (Emery 2010: 28). To find ways to engage people in conversations that bridge the different perceptions of what is working and why that is critical to long-term success (Emery 2010). That might require periodical evaluations of both achievements and failures.
- To work with the local institutions or places where Latino immigrants attend such as: churches, soccer leagues, libraries, and traditional Latino social and cultural events (Cinco de Mayo, Día de la Virgen de Guadalupe, Día de los Muertos, etc.)
- Successful integration may require long-term effort and can only be achieved if the participants involved are strongly committed to make it work.

As a tool for future projects regarding the inclusion of Latino immigrants in farming and gardening programs and local food systems, an upward spiral involving
successive emphasis on different community capitals (based on the results from this study) illustrates the potential for change (See Figure 1 in Chapter 2).

Future research should address topics related to creation of specific agricultural knowledge among Latino immigrants, analysis of how successful agricultural programs for immigrants work, how immigrants can be socially included in the daily food systems dynamics in rural towns, and how to make immigrants’ agricultural practices even more sustainable.
References

(http://www.albafarmers.org/publications/e_news_nov09E.html)


Appendix

Interview schedule

English version

Part 1- Circumstances of Migration

a- Where were you born? (country, department, village)
b- In what year were you born?
c- Did you live in a rural area in your country?
d- Did your family have land or a farm in your country? What crops and livestock did you have? How large was the farm that your family had or has? How was that experience?
e- If you lived in a city, did your family have a garden or animals? What did they grow? What animals did they have?
f- When did you come to the U.S.? Where did you go first? Why did you come to this country?
g- How well do you speak English? How well do you speak Spanish? Do you speak other dialect?

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<td>Employment Training</td>
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<td>Community College</td>
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h- Have you studied in US? Where?
i- Why did you decide to come to Iowa? Why did you come to Denison/ Marshalltown? Did you know any people here?
j- How old were you when you came?
k- Did you leave here and come back?
l- Where did you work before you came to this town?
m- How were the characteristics of the jobs you have had?

n- Have you had experience in agriculture? When was the first time that you participated in agricultural tasks or jobs?

o- What kind of experience related to agriculture did you have in your country?

p- Do you think that your past jobs have helped you in your life and particularly in this enterprise with the garden? How?

q- Do you currently have a job? What do you do? Where do you work?

r- What differences do you find between the work in the garden with those jobs you have had or your current job? Could you describe that in details?

s- What have been the greatest challenges you have had in this country? Which are the things that have helped you in this country and particularly in this town and in your personal enterprises like this?

t- When did you begin with this garden?

**Part 2- History of Employment and Agricultural Knowledge**

a- With whom and where did you learn about agriculture? Who has helped you learn about agriculture here in Iowa?

b- What are the main challenges that you have had in farming this garden?

c- Why do you participate in this garden?

d- What did you expect when you began this garden?

e- Has your experience with the garden meet your expectations? In what ways?

f- What is the best thing you have found in working in your garden?

g- What has been the biggest challenge in working in your garden?

h- Does the garden provide economic support for you? Does it save your family and friends money in supplying food for meals? Does your family eat healthier food because of the garden? What are other benefits for and your family and friends from having a garden? Could you explain that in details?

**Part 3- Networks, political involvement and work in the garden (agricultural knowledge and techniques)**

a- How did you learn about this (community) garden?

b- Do you have relatives or friends that have had experience with farming or gardens in this country? Did they help you at the beginning of your participation in this garden? How did they help you? What kind of support did you receive from them?

c- Does your family or your friends help you in the garden? Who help you and how much time they spend on that? In which tasks do they help you?

d- How well do you know the other gardeners? Do you often exchange information on how to make each others’ gardens better?

e- Have you participated in course or classes about agriculture in this country? Where and when?

f- What kind of support or help did you receive in selecting and accessing seeds or plants, tools, equipment, pesticides or fertilizers, etc., and from whom? Have you had difficulties with your crops? How have you found the solutions for them?

g- Since you started the garden, have you met new people?

h- Are there people that help you in the garden? Who are they? How do they help you?
Work in the garden

a- How long have you cultivated vegetables or fruits in gardens or farms?
b- How much time do you dedicate to this garden? How does that vary during the growing season and according to the weather?
c- How was the process of buying seeds, planning your garden, etc?
d- How and why did you select the particular varieties for this farming season?
e- What techniques and knowledge have you or your family used in this garden, and that you learned in your country or in US? Could you detail how and where did you learn those techniques?

- About seeds and different varieties of vegetables.
- How to cultivate.
- Fertilizers and pesticides and fungicides (natural or chemicals).
- Watering/Irrigation.
- Maintenance of the equipment and materials used in the garden.
- When and how to harvest the different varieties.
- Commercialization, preparation for daily consumption and conservation.

f- Do you have any other garden?
g- Do you share your farming experience with friends, institutions or relatives? What kind of experience do you share: knowledge, experiences, vegetables, money, tools, etc.?
h- Do you use your vegetables from the garden for your own consumption? How much of your harvest do you use for that?
i- Do you sell your vegetables or fruits? Where?
j- Do you feel that since your experience in the garden do you have more participation in the community’s matters? In which way? Does the community recognize your efforts in the garden?
k- Do you are a member of any Latino organization in this locality, in Iowa, or in the U.S?

Part 4- Family and material and non-material values of the garden

a- What is the importance that the garden has for the members of your family?
b- Are there vegetables that are part of your family’s daily diet? Which one are those vegetables? Why did you decide to cultivate them in your garden?
c- Who cooks in your home? Who prepares the vegetables you bring home? In which kind of food do you use the vegetables you bring home?
d- Do you store the vegetables for the rest of the year? How do you do that? Where you or your family learned to do that?
e- Do you share part of your vegetables with anyone else?

Part 5- Future Agricultural Perspectives

a- Would you like to cultivate more land? What kinds of crops would you like to have?
b- Why would you like to have more land for farming? It would be for: domestic consumption, for sale, or like a hobby?
c- Which are the main challenges or obstacles that would you find if you want to start your own farm in this country?
d- How the people or institutions you have met with this garden could help you in your future projects related to farming?
e- What are your goals or wishes related to farming?

Spanish version

Parte 1- Circunstancias de Migración

a- ¿Donde nació (ciudad, pueble, provincial)
b- ¿Cuándo nació?
c- ¿Vivía en una zona rural en su país?
d- ¿Su familia tenía campo? ¿Que cultivaban o criaban? ¿Qué extensión de campo tenían o tienen? ¿Cómo era esa experiencia?
e- ¿Si usted vivía en una ciudad, su familia tenia una huerta o animales? ¿Qué cultivaban? ¿Qué clase de animales tenían?
f- ¿Cuando se vino a los Estados Unidos? ¿A dónde fue primero? ¿Por qué motivo vino a este país?
g- ¿Qué tan bien habla usted inglés? ¿Qué tan bien habla usted Español? ¿Habla usted otra lengua o dialecto?

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Años de Escuela

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¿Ha usted estudiado en Estados Unidos? ¿Dónde y qué?

h- ¿Por qué decidió venir a Iowa y a este pueblo? ¿Tenía conocidos o parientes aquí en Denison/Marshalltown??
i- ¿Qué edad tenía cuando vino a este pueblo?
j- ¿Has ido y venido?
k- ¿Donde ha trabajado antes de venir a Iowa?
l- ¿Cómo eran las características de esos trabajos?
m- ¿Ha usted tenido experiencia en agricultura? ¿Cuándo fue la primera vez que participó en tareas o trabajos relacionados a la agricultura?

n- ¿Qué tipo de experiencia relacionada a la agricultura has tenido en su país de origen?

o- Piensa que sus anteriores trabajos lo han ayudado en la vida, y en particular en sus emprendimientos personales con la huerta? ¿Cómo?

p- ¿Cuáles son los desafíos más grandes que ha tenido en este país? ¿Cuáles son las cosas que usted piensa le han ayudado a llevar adelante salir adelante en Estados Unidos y particularmente en tus emprendimientos personales como este de la huerta?

**Parte 2- Historia del empleo y de los conocimientos agrícolas**

a- ¿Quiénes y en donde le enseñaron a trabajar la tierra? ¿Quién le ha enseñado a trabajar la tierra aquí en Iowa?

b- ¿Cuáles son las principales dificultades y/o desafíos que usted ha tenido para trabajar la huerta?

c- ¿Por qué participa en esta huerta?

d- ¿Qué esperaba cuando comenzó con la huerta?

e- ¿Ha podido cumplir con las expectativas que usted tenía? ¿De que manera?

f- ¿Cuáles son las mejores cosas que usted ha encontrado en trabajar la huerta? ¿Qué le gusta y que no le gusta del trabajo en la huerta?

g- ¿Cuáles son las principales dificultades que ha tenido para trabajar en la huerta?

h- ¿El trabajo en la huerta le ayuda económicamente? ¿Eso de alguna manera le significa ahorrar dinero en la compra de alimentos para el hogar? ¿Cuáles serían los otros beneficios que usted o su familia o amigos obtienen de la huerta? ¿Podrías explicar eso en detalles?

**Parte 3- Vínculos, participación política y trabajo en la huerta (conocimiento y técnicas agrícolas)**

a. ¿Cómo se enteró de la huerta comunitaria?

b. ¿Tiene conocidos que han tenido experiencia en huertas o granjas en este país? ¿Ellos lo ayudaron o incentivaron a empezar con esta huerta? ¿Qué tipo de ayuda recibió de ellos?

c. ¿Su familia o amigos lo han ayudado en la huerta? ¿Quién lo ayudo y cuanto tiempo invirtieron en eso? ¿En qué tareas lo ayudaron?

d. Que tan bien conoces a los otros granjeros de la huerta? ¿A menudo intercambias información para mejorar el uno al otro?

e. ¿Ha participado de cursos o clases acerca de agricultura en este país? ¿Dónde y cuándo?

f. ¿Qué tipo de ayuda recibió en la selección y acceso de semillas o plantas, herramientas, equipamiento, pesticidas o fertilizantes, etc. Y de quién? Ha tenido dificultades con sus cultivos? ¿Encontró la solución para ellos? ¿Cómo?

g. ¿Desde que empezó con la huerta ha conocido gente nueva? ¿Quiénes y cómo?

h. ¿Hay gente que en la actualidad le ayude con la huerta? ¿Quiénes son esas personas y como lo/a ayudan?
Trabajo en la huerta

a- ¿Cuánto tiempo hace que cultiva vegetales o frutas en la huerta o en la granja?  
b- ¿Cuánto tiempo le dedica al trabajo en la huerta y cuando? ¿Cómo esto varía dependiendo de la estación y del clima?  
c- ¿Cómo fue el proceso de comprar semillas, plantas, plantar, etc?  
d- ¿Cómo y por qué eligió las variedades que cultivó en esta temporada?  
e- ¿Cuáles son las distintas técnicas y conocimientos que usted o su familia han utilizado en la huerta, cuales aprendió en su país y cuales aprendió en Estados Unidos? ¿Puede detallar como y en donde aprendió esas técnicas o conocimientos?  
   - Sobre semillas y variedades de vegetales.  
   - Plantar.  
   - Fertilizantes, pesticidas o fungicidas, etc. (naturales o químicos).  
   - Riego.  
   - Mantenimientos de equipos y materiales utilizados en la huerta.  
   - Cuando y como cosechar.  
   - Comercialización, utilización diaria, conserva, o donaciones.  
   
f- ¿Tiene usted otra huerta aparte de esta?  
g- ¿Comparte la experiencia de cultivar con amigos, instituciones o amigos? ¿Qué clase de experiencias comparte: conocimiento, experiencias, vegetales, dinero, herramientas, otras?  
h- ¿Utiliza los vegetales para su consumo propio? ¿Cuánto de lo que cosecha lo utiliza en consumo de su hogar?  
i- ¿Vendes vegetales o frutas? ¿Dónde? ¿Cómo supo de ese lugar?  
j- ¿Piensa que desde su participación en la huerta usted ha tenido más participación en los asuntos de la comunidad? ¿De qué manera? ¿Piensa que la comunidad reconoce los esfuerzos de esta huerta?  
k- ¿Es usted miembro de alguna comunidad de Latinos en Iowa o en Estados Unidos?  

Parte 4- Family and material and non-material value of the garden

a- ¿Qué importancia tiene la huerta para usted y los miembros de su familia?  
b- ¿Hay vegetales que son parte de la dieta diaria de su hogar? ¿Cuáles son esos vegetales y porque decidió cultivarlos?  
c- ¿Quién cocina en su casa? ¿Quién prepara los vegetales que trae a la casa? En que tipo de comidas utilizan los vegetales de la huerta? ¿Preparan comidas de su país? ¿Cuáles son esas comidas?  
d- ¿Almacenan parte de los vegetales para el resto del año? ¿Cómo hacen esas conservas? ¿Dónde aprendieron usted o su familia a hacer eso?  
e- ¿Comparte lo que cosecha en la huerta? ¿Con quién? ¿Por qué motivo?  

Parte 6- Perspectivas agrícolas a futuro

a- ¿Le gustaría cultivar en pedazos de tierra más grande? ¿Qué tipo de cultivos le gustaría tener?  
b- ¿Por qué o para que le gustaría tener una huerta más grande o un rancho? ¿Consumo doméstico, para vender o como entretenimiento?
c- ¿Cuáles serían los obstáculos que usted encontraría si quisiera empezar un emprendimiento más grande como una granja o rancho en este país?

d- ¿De qué manera la gente o las instituciones le podrían ayudar en esos proyectos relacionados a cultivar?

e- ¿Cuáles son las metas o deseos que tiene vinculados a cultivar?
Acknowledgments

I would like to take this opportunity to express my thanks to those who helped me with the different steps of this research. Thanks to all the gardeners and their families that directly or indirectly participated in this study, to other graduate students at Iowa State University (ISU) that provided me materials and information, and to Dr. Jan Flora and Dr. Cornelia Flora from ISU for reviewing this study during its entire process.